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THE PRESENT STATUS OF SERUM THERAPY.*

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By the term "Serum Therapy" is meant the treatment of certain morbid conditions by the use of the blood of animals which have been subjected to gradually increasing doses of the toxins (until tolerance to enormous doses is established), elaborated in artificial media by the germ recognized as the specific etiologic factor in the production of the disease under treatment.

Classification of Sera as Used in Medicine.—This is an arbitrary classification on my part. Other arrangements may be made by those who desire to do so in accordance with their special purposes, but in this paper I propose to consider in two broad groups many of the sera proposed for the treatment of disease in man. These two groups I called "Curative Sera" and "Diagnostic Sera." Under the head "Curative Sera," I include all those which have been proposed as remedial agents. Under the head "Diagnostic Sera," I refer to sera which have been used for the purpose of identifying the morbid condition under consideration.

I have also classified sera as to their efficacy, making three broad divisions. First, those whose efficacy has been demonstrated beyond reasonable doubt, such as:

Antidiphtheritic.
Antitetanic.
Antiplague.
Antistreptococcic.
Serum for Exophthalmic Goitre.

Second—Those whose value appears likely or possible, but in support of which there is not yet sufficient evidence to warrant their inclusion in Class 1, such as:

Serum for Hay Fever.
Tuberculin.
Antityphoid.
Antitubercle.
Antirabic.
Antivenene.

Third—Those sera whose efficiency is questioned by the majority of observers or whose value has been demonstrated to be entirely negative, such as:

Antipneumococcic Sera.
Antiscarlatinal Sera.
Antidysenteric Sera.
Antivarioloid Sera.
Antitoxin for Cerebro-Spinal Meningitis.
Serum for Rheumatism.
Serum for Syphilis.
Serum for Anthrax.
Cancer Serum.
Leprolin.

Workers in Sera.—It would be a difficult matter indeed to classify the workers in sera, since directly or indirectly, bacteriologists the world over (almost always medical men) are laboring with vast expenditures of time and money and strength to improve the sera already known to be of value, to overcome the difficulties attendant upon the elaboration of, and to produce sera of definite value in those diseases which seem to be amenable to this method of treatment and to find the specific etiologic factor and its antidote in those diseases which we have reason to believe are due to some specific germ and which we have hopes of curing by the use of serum.

Elaboration of Sera.—I presume that the methods employed in the elaboration of the various sera are familiar to you all, and that, therefore, it would be useless to enter into any elaborate discussion on this point, but for the benefit of those who may not be thoroughly familiar with the subject, I may briefly say that in the manufacture of antidiphtheritic, antitubercle, antistreptococcic, antiplague,

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antipneumococcic, antiscarlatinal, antidysenteric, and other sera, the methods usually employed are as follows:

From typical human cases of the specific disease cultures are taken—in the case of diphtheria from the nose and throat; in streptococcic infection from throat, nose, heart's blood, pus, etc.; in scarlet fever cases from the heart's blood and from the throat; in tuberculosis from the sputum; in plague from the buboes and the blood; in typhoid from the blood; in pneumonia from the sputum, and the scrapings of blood from the lung, and so on—with which suitable artificial culture media are inoculated.

By well known bacteriologic methods, pure cultures are isolated, which are in many cases run through lower animals, sometimes for several generations, to increase their virulence, and the pure cultures are introduced into flasks of bouillon.

As a general rule these flasks are stored for two or three weeks in special incubators, where the temperature is maintained by automatic devices at 100° F. The flasks are then removed, the contents critically examined to determine that the cultures have not been contaminated by the presence of other germs. The bouillon is then filtered through paper and finally through porcelain under high pressure. This filtrate is then thereafter known as toxin, and is tested upon guinea pigs to determine the minimum lethal dose for a pig of standard weight (250 grammes).

After the M.L.D. has been determined, the treatment of the animal selected for the elaboration of the serum is begun. The horse has been used commonly for this purpose in the better known serums, although a great many other lower animals have been called upon to render this service. The initial dose of the toxin is necessarily very small, though the quantities subsequently administered are gradually increased until the animal can withstand enormous doses, amounting in some cases to 500 cc. of virulent toxin, or many thousand times the M.L.D. for a standard guinea pig.

When this point has been reached, the animals are considered immune to the disease, owing to the presence in the blood of large amounts of antitoxin. Nowadays, owing to improved methods, it is considered more desirable to increase the virulence of the toxin of the disease rather than the quantity of the fluid injected. The blood is then drawn from the animal, collected in suitable vessels and stored under aseptic conditions until the clot separates. When the separation of serum and clot is complete, the former is syphoned off into sterile flasks and a preservative is added. The serum is now filtered to remove all bits of fibrin or the turbidity which sometimes results from the addition of the preservative.

The serum is examined bacteriologically to determine its absolute freedom from live germs and the animal from which it was drawn is kept under close observation, from motives of precaution, to establish the fact that the animal was perfectly healthy at the time the serum was obtained.

The antitoxic value of each cubic centimeter, or the number of units, so-called, are now determined and the process is complete. We are indebted to Ehrlich, of Frankfort, for our knowledge of how to determine the value of antidiphtheritic serum as expressed in units. So far, our knowledge has not progressed sufficiently to enable us to apply the same standard to other sera. I take it for granted that you are all thoroughly familiar with the exact meaning of the word unit as applied to sera. If not, I shall be glad to explain later.

The above processes are followed out in the elaboration of nearly all the sera mentioned in this paper. Special technique is, however, employed in many cases and various modifications and elaborations of the steps mentioned are made by different workers.

CURATIVE SERA.

Class I.—Sera of Demonstrated Efficacy. Antidiphtheritic Serum. Antidiphtheritic serum justly holds the highest place in our opinion. The magnificent record of this remedial agent is known throughout the

world. The death rate of diphtheria, formerly one of the most dreaded diseases, is now reduced to a point where the disease no longer possesses its former terror. I almost venture to say that every case of diphtheria seen early enough, and treated with sufficient quantities of potent serum, may be saved.

Time was when supplies of serum were difficult to obtain and of problematic value and many cases were unavoidably allowed to go down to death because of the inability of the attending physician to obtain for love or money any of the life-saving serum. At the present time antidiphtheritic serum of absolutely definite value may be obtained at nearly every pharmacy in the land. The easy diagnosis of diphtheria, the availability of serum supplies and the immense amount of data collected as to its positive value, give rise to the thought that any physician who allows a case of diphtheria to die without using *adequate* doses of the serum is guilty of criminal negligence and unworthy of his place in our profession.

Antistreptococcic Serum. The antistreptococcic serum prepared according to the method of Aronson, (which has been followed with slight modifications in the production of our own antistreptococcic serum) has possibly given the most satisfactory experimental and clinical results. This is prepared by injecting into horses a single strain of streptococcus whose virulence has been increased by repeated passage through rabbits. Such a serum, in doses of .0005 cc., has been found to protect mice against 10 M.L.D.'s of a similar culture of streptococcus. It proved to possess an inhibiting action upon streptococci in vitro.

A polyvalent serum was prepared by injecting into animals streptococci isolated from various sources, puerperal fever, scarlet fever, erysipelas, tonsilitis, etc. Tavel (22) prepared a serum in this manner, while Moser (23) uses several strains of streptococci, all, however, originating from cases of scarlatina.

Menzer (24) prepared an antistreptococcic serum for the treatment of articular rheumatism from cocci isolated from the throat (see antirheumatic serum).

It is impossible to resist the conclusion that on the whole the use of antistreptococcic sera has been disappointing. This was at first attributed to the existence of several strains of streptococci which react differently to a given serum. If this were true, polyvalent sera prepared with several strains of streptococci from different sources should be more generally applicable, producing beneficial results in a greater number of cases. This, however, does not occur, as the monovalent sera have been as satisfactory in every way as the polyvalent. What is probably responsible for the large number of cases in which the serum is used with indifferent results is the fact that many cases of sepsis are complicated by organisms other than streptococci, upon which it can have no effect. In fact, in many cases of sepsis in which the serum has been used, the streptococcus is not at all responsible for the trouble, but the infection is due to other pyogenic bacteria, e. g., staphylococcus pyogenes. There is no doubt that in a certain proportion of cases, at all events, of pure streptococcic infection, the serum has acted most beneficially.

Success resulting from the use of this serum has been cited by many authors in puerperal infection, erysipelas, chronic articular rheumatism, urticaria and scarlet fever. Menzer has contributed an interesting (4) paper on the detailed use of antistreptococcic serum and its application to human medication.

Antistreptococcic sera are somewhat experimental as yet, but on the whole very encouraging for true streptococcic infection.

Antitetanic Sera.—In a recent conversation, Prof. Ehrlich, director of the Imperial Institute for Serum Therapy, of Frankfort, told the writer that the use of antitetanic serum in tetanus was just as specific, just as certain of results, as the use of antidiphtheritic serum in diphtheria, the only difficulty being that medical practitioners are prone to use too small doses and to give them too infrequently. He strongly advocates the use

of very large initial doses (30 cc. or more), followed by *frequent* subsequent doses of 10 or 20 cc. until the desired result is obtained.

The method of administration is subject to some difference of opinion; subcutaneous, intravenous, intraneural, intracerebral, intraspinal by lumbar puncture, all have their advocates.

The use of antitetanic serum as a prophylactic is now regarded as almost obligatory on the part of the attending physician. Wounds in the feet, hands, or, in fact, any part of the body, which have come in contact with street dirt, garden earth, soil from the proximity of stables or gardens, or made with nails or attendant upon the use of fire-arms, as in 4th of July festivities, should always be treated as though infected with tetanus bacilli. The use of dried antitetanic serum in the form of a dusting powder is advocated by McFarland, Journal A. M. A., July 4, 1903. By Letulle, Press Medicale, No. 57. By Alexander, Medical and Surgical Monitor, Sept. 15, 1904. Other observers have dressed these cases as ordinarily done, but have supplemented the local treatment by subcutaneous injections of antitetanic serum. Laboratory experiments have shown that this treatment is efficacious in 90 per cent of cases of intentionally produced tetanus in laboratory animals.

Antiplague Serum. Yersin, Calmette and Borell (29) have taken the initiative in the production of a plague immune serum. Yersin's serum, also called the Paris serum, is prepared by injecting into horses, first, bacilli killed at 70° C., later, highly virulent bacilli, and lastly, their toxins.

Lustig's serum is made by injecting into horses the nucleo-proteids which he isolated from cultures of the plague bacillus. An antiplague serum is also manufactured under the directions of Tavel (30) in the Berne Institute, prepared in practically the same manner as Yersin's serum. Markl (31) also prepared a purely antitoxic serum, which although not of sufficient strength to give any definite results, seems to enhance the value of the Yersin serum when used in combination with it.

A careful review of the entire subject and a consideration of the numerous clinical reports upon the use of antiplague sera, leads to the following conclusions:

1. Yersin's (Paris) serum is of value as a remedy for bubonic plague. It should be given early in the case and in large quantities. The serum acts much more energetically when given intravenously than by the subcutaneous route. The dose may be from 60 to 150 cc. or even 300 cc.

2. The claims of Lustig's serum as a remedy are less well established than those of Yersin's serum, but some evidence has been adduced in its favor.

3. Yersin's serum may also be used prophylactically, but the protection gained is transitory, so that repeated injections are necessary in the presence of an epidemic.

Antiplague serum is of positive value when given in large doses.

DuPratt (50) reports the result of the treatment of forty-five cases of bubonic plague with the Roux-Yersin serum. The results obtained were very encouraging, the mortality falling to 13 per cent. Experiments show that the best results were obtained when the initial dosage was approximately 300 cc. The injections were all subcutaneous, difficulty being experienced with Calmette's intravenous injection. One frequent effect of the serum injections was general arthrodial pain, which was temporary, however.

Serum for Exophthalmic Goitre. The first work along the lines of producing a serum for exophthalmic goitre was done by Ballet and Enriquez (42). About the same time Lanz (43) prepared a serum from thyreoidectomized animals, which he claims to have used with good success in this troublesome affection. Merck & Co. prepared a serum of this kind according to the formula of P. J. Moebius (44). Several reports have appeared, especially in the German periodicals, upon the therapeutic activity of this preparation. Quite favorable results seem to have been obtained, consisting of marked improvement in the pulse rate, tremor and nervous

symptoms characteristic of the disease. A gain in weight, increased appetite and decrease in the size of the tumor were almost invariably noted. The milk of thyreoidectomized animals has also been used with good results.

Thyreoidectin, a preparation from the whole blood of thyreoidectomized animals, has given very promising results in the hands of several eminent neurologists in the United States. Lepine prepared a strictly antithyreoid serum by injecting into animals increasing amounts of thyreoid gland substance, for which he claims beneficial results upon Grave's disease.

Exophthalmic goitre has been experimentally treated with tablets of dessicated milk from thyreoidectomized goats and cows; the liquid milk taken from these animals after they were sujected to the operation of thyreoidectomy; tablets of dessicated blood from thyreoidectomized animals, the serum from thyreoidectomized animals and finally the powdered, dried whole blood.

The clinical course of exophthalmic goitre is so varied that one is justified in withholding an opinion as to the results of any particular method of treatment until very considerable numbers of cases have been followed for a long time. However, when clinicians of the reputation of Moebius and Von Leyden go on record in favor of a method, which is furthermore founded on a scientific principle, it may be thought to be of no inconsiderable value. Von Leyden (51) has recently published an interesting clinical lecture on the topic.

The literature is fairly full of authorities for the statement that the treatment of exophthalmic goitre by the blood of thyreoidectomized animals is followed by improvement in the symptoms of tachycardia, exophthalmos, Graefe's symptom, struma, physical depression, insomnia and headache, and a gradual disappearance of the whole of the morbid symptoms. The treatment must be continued for long periods, possibly years, before a total cessation of symptoms could be considered permanent. The apparent results are so striking as to encourage further use of the serum.

Class II. Serum whose value remains to be proved, though possible.

Antivenine.

Calmette (25) and Fraser (26) have prepared sera against snake poison. That of Calmette is now found upon the market under the name of Antivenine. In order to understand the action of these sera it is necessary to know that poisons from different snakes are not of the same composition. Independently of the less important agglutinins and haemolysins, we encounter two entirely distinct bodies, namely neurotoxin and haemorrhagin. The virus of the rattlesnakes (crotalus) contains little neurotoxin and acts principaly in virtue of the large amount of haemorrhagin which it contains. Since Calmette's serum is prepared by means of the poison of the hooded snake (cobra), which is rich in neurotoxin and poor in haemorrhagin, it does not protect against the bite of the rattlesnake; vice versa, an anticrotalus serum will not protect against the cobra poison.

From the fact that it is often impossible to ascertain the particular species of snake by which a person has been bitten, it would seem as though a polyvalent serum prepared from the venom of all the more common species would be of greater applicability. Little work seems to have been done and fuller investigation is necessary with regard to the manufacture of a serum of this kind. Antivenine is experimental but very encouraging.

Anticrotalus Serum. Shortly after Behring demonstrated the possibility of producing an antitoxin antagonistic to diphtheria toxin and Kitasato did the same for tetanus toxin and Ehrlich for certain vegetable alkaloids, Bertrand and Calmette studied serpent's venom and showed that when animals were injected with progressively increasing doses of cobra venom an anti-body antagonistic to the venom appeared in the blood. This was named antivenine. Martin, working in Australia, showed that the Calmette antivenine was useless in antagonizing the venom of Australian snakes and McFarland in our own country has found its action of little avail against American snakes. Flexner and Noguchi, of the Serum Institute of Copen-

hagen, have taken up the subject and have been able to produce a high degree of immunity against rattlesnake venom and to produce in the blood of immunized animals a considerable amount of what they call anticrotalus serum, antagonistic not only against the toxoids but against the toxins and consequently, against the venom itself. It seems possible that they have given us the method of preparing an antitoxic serum by which we may counteract the action of rattlesnake venom.

Hay Fever Serum. A. Lubbert has published (52) directions for the manufacture and use of pollantin, the antitoxic serum recommended against hay fever. A toxalbumen is isolated from the pollen of grasses liable to set up a catarrh, and this then injected into horses in gradually increasing doses. After two or three weeks a high degree of immunity is established and the blood is withdrawn and allowed to express its serum. The subcutaneous use of pollantin is not recommended, since the immunity thus conferred is only partial and of short duration; it is much better to apply the serum directly to the eyes, nose or pharynx. Very obstinate cases should carry a small bottle with dropper with them every day, and resort to an instillation as soon as the first irritation is noticed. If the attack has already set in, the pollantin should be used every ten minutes and the patient instructed to stay indoors.

The effect of "Dunbar's Pollantin" differs considerably in different cases. In some the remedy unaccountably fails. The duration of the relief afforded is not long and repeated instillations of the antitoxin are required. Subcutaneous injections are not advisable, as the local oedema produced is considerable and the amount of protection gained is uncertain.

Tuberculin. The preparation of tuberculin and its diagnostic value in cattle is too well known to require any further reference. The same product has been used for diagnostic purposes in man, in doses of 1 to 10 mgs., but has never become very popular.

As a method of producing active immunity in man, progressively increasing injections of tuberculin have been at one time highly praised, again rejected and are lately being more carefully investigated.

Koch's (36) method of gradually increasing the dose is now used in all instances, the injections never being repeated until the reaction from the previous injection has entirely disappeared. The quantities administered have been considerably decreased since this method of immunization first came in vogue. Originally Koch gave 1 mg., rapidly increasing the dose up to 1 cc. In two or three weeks he attained 500 times the initial dose. High fever and strong reactions and other favorable results were produced by these large doses. At the present time much smaller initial doses are used, 1-10 to 1-20 mg., increased very gradually, 1-10 to 1-20 mg. at a time, and never repeated while the slightest local or systemic disturbance remains from the previous injection. Goetsch (37), Petruschky (38), Krause (39) and others claim to have obtained satisfactory results from this method. Tuberculin must still be regarded as an experimental product for therapeutic purposes.

Antitubercle Serum. Harricourt (32) and Richet first attempted the use of serum derived from unsusceptible animals possessing a more or less well developed natural immunity against tuberculosis. The experiments conducted along these lines gave little promise of ultimate success, and their failure led to artificial immunization of animals against the tubercle bacillus and its toxins.

Maragliano's serum.—Of all antitubercle sera that of Maragliano (33) has probably attracted the greatest attention. It seems to have the most rational scientific foundation. Maragliano worked upon the supposition that the toxin of tuberculosis is not a single chemical substance, and attempted to separate it into its component elements. In the culture fluids he found a "toxalbumin" precipitated by heating to 100° F. and producing in healthy as well as tubercular animals hypothermia and sweats, followed by collapse if given in sufficient doses. From the bodies of the bacilli he obtained an aqueous extract having the same effect upon man and animals as glycerin extracts. Be-

sides these he isolated several other less important principles which were not used in the preparation of his serum. The "toxalbumen" and "aqueous extract" in the proportion of one of the former to three of the latter, were used for the production of the serum. This serum possesses the property of neutralizing fatal doses of tuberculin. It has been used in Italy to a large extent. Maragliano claims some wonderful results from his serum. Most other observers who have tried it have failed to observe any marked improvement. Lately several prominent investigators in his own country have denied that the serum exerts any influence upon the disease.

Fisch (34) prepared an antitubercle serum by injecting horses with progressively increasing doses of Koch's T R, which animal experiments seemed to prove possessed considerable protective properties. This serum has been used considerably in America.

Marmorek (35) produced tuberculin by growing tubercle bacilli in a mixture of leucotoxic calf serum and glycerin-liver bouillon. The filtrate from these cultures was injected into horses, and after some eight months treatment produced an antitoxic serum. This serum showed some protective power in rabbits but very little in guinea pigs. Marmorek claims favorable results from its use in cases of tuberculosis which are not too far advanced. He does not give the details of his toxin production, nor are his results confirmed by other observers.

The serum diagnosis of tuberculosis has not been given an extended trial in America. Discussion of the subject was recently renewed by Arloing and Courmont at the Congress of Arts and Sciences in St. Louis. These people have found that serum from tubercular patients and fluids from tubercular inflammatory lesions, especially the serum from tubercular pleurisy and tubercular peritonitis, have the power to agglutinate tubercle bacilli. In the case of non-tubercular affections, no agglutination takes place. The authors claim that they have been able to control their clinical findings by autopsies in a large number of cases. The test has been considered by a number of observers both in France and Germany, and though there are some who deny its value, it seems worthy of a more extended trial.

Antirabic Serum. Babes (27) and Lepp were the first to point out the fact that serum of animals immunized against rabies possesses the property of conferring immunity upon other animals. They succeeded in protecting dogs by means of such a serum against subdural inoculations of street virus and natural infection by bites of rabid animals. Rabbits could not be completely protected, although a much longer period of incubation occurred in the cases when the immune serum was given.

Tizzoni and Centonni (28) confirmed the work of the above observers and produced a highly immune serum, 1½ drops of which protected rabbits against the fatal dose for a 2 kg. rabbit.

In 1890 Babes used simultaneous (serum and virus) inoculations with fairly good success. Kraus and his co-workers, Keller, Clairmont and Maresch, have added valuable contributions upon a rational method of standardizing such sera.

The serum treatment does not seem to have been actually tried on man. It would, however, seem advisable to have recourse to it in cases which are only seen some time after the injury has taken place, and in which there is, therefore, reason to fear that there will not be time enough to produce immunity by Pasteur's method.

Serum for Rheumatism. Menzer has prepared a serum by injecting into horses streptococci isolated from the throat, which he has used in the treatment of acute and chronic articular rheumatism. If the statistics which he gives upon its therapeutic activity and the tables which he draws up in his article (53) in the Munchener Medicinische Wochenschrift, Aug. 16th, 1904, are not made up of selected cases and are reliable, it would certainly seem as though his serum possessed considerable value. Some reports from other observers, however, are by no means as optimistic, claiming that no specific action can be observed following the administration of the serum and stating that they would only use the serum as a last re-

sort and would expect very little from its use. It should be regarded as purely experimental.

Poynton and Shaw reported to the Pathologic Society of London their recent investigation to establish the specific nature of rheumatism. They hold that rheumatic fever is a definite, distinct clinical entity. They believe that the streptococcus aureus and the diplococcus rheumaticus can be easily distinguished. Their work tends to encourage those who believe in the eventuality of a serum treatment for rheumatic fever.

CLASS III. SERA WHOSE EFFICACY IS NIL AT PRESENT.

Antipneumonic Serum. An enormous amount of work has been done by a number of investigators with the object of producing a serum against pneumonia. G. and F. Klemperer (6), Mosny (7) and Foa (8) believed that an antitoxin could be demonstrated in the serum of animals highly immunized against the pneumococcus. Other experimenters, followers of Metchnikoff, ascribe an important role to the process of phagocytosis in the production of immunity against diplococcus pneumoniae.

Isaeff (9) and Mennes (10) claimed that they observed under the microscope that the leucocytes, which behaved rather indifferently toward pneumococci in normal serum, attacked these organisms very energetically in the presence of a pneumonia immune serum. Pane (11) thinks that upon contact with immune sera the leucocytes acquire the property of giving off substances which confer immunity against the pneumococcus upon the organism. Bonome (12) and Emmerich (13) demonstrated that any protective power which the serum of immunized animals possesses is due entirely to an increase in the natural bactericidal properties of the patient's serum.

By injecting into horses a particularly virulent strain of pneumococcus an immune serum was produced at our laboratories. This product, when placed in the hands of careful observers for clinical trial, failed to come up to expectations, no influence upon the disease could be attributed to it.

The results obtained up to the present with all antipneumococcic sera are disappointing. Some effects seem to be noted in animals. In man, none of the sera at present obtainable seems to exert any very beneficial influence upon the disease. It is possible that the immune bodies formed in the lower animals do not find suitable complements in man. There may be different strains of pneumococci which react differently to anti-bodies. More might be expected from an antitoxic than a bactericidal serum, as pneumonia presents symptoms of profound intoxication; but as it has not been possible to obtain potent toxins from the diplococcus pneumoniae, no such serum is at present available, nor is there any immediate prospect of its preparation. Antipneumococcic serum is most decidedly experimental.

Roemer's pneumococcic serum has been used in the treatment of corneal ulcers. It is possible, according to Roemer, so to immunize rabbits and monkeys with respect to pneumococci that the inoculation of highly virulent organisms into the corneae of these animals fails to give rise to inflammation. He likewise succeeded in inhibiting the development of a corneal ulcer which had already begun to form in the eye of an animal. In the case of man, however, considerable clinical experience is needed before the merits of the serum treatment can be discussed.

It has been noticed that there is a peculiar coincident nephritis in many cases treated with serum. This has been explained by some observers on the ground that it is the protest of the kidney to the overwork necessitated by the introduction into the body of such large quantities of foreign albuminous material.

In the presence of the writer, at the meeting of the American Medical Association in Saratoga, in 1902, Osler declared that the condition of pneumonia therapeusis was a disgrace to the medical profession, that a mortality rate of 40 per cent was simply fearful, and yet medical men could look upon it without the quiver of an eye-lash. Since that time, however, the condition has changed very slightly if at all. Tremendous labor and enormous expenditures of money have

as yet produced nothing in the way of a curative serum for the treatment of pneumonia which possesses anything but a negative value. The writer has personally been engaged in work along this line for nearly three years and has yet to learn of the production of an antipneumococcic serum in support of whose efficiency any absolutely incontrovertible evidence can be brought. The outlook is rather discouraging.

Antidysenteric Serum. The first practical application of an antidysenteric serum for the treatment of dysentery was made by Shiga (1). He used a serum from horses which had been highly immunized against this bacillus. A few milligrams of this serum protected guinea pigs against five times the M.L.D. of dysentery bacilli. By using this serum he claims to have reduced the mortality from the disease 50 per cent. Kruse (2) prepared a similar serum and noted a reduction in mortality of from 11 to 8 per cent. Rosenthal (3) treated 157 cases with Gabritchewski's serum (4), with a death rate of 4.5 per cent as against a mortality of 10 to 11 per cent in the cases treated without serum. These cannot be considered as unbiased reports as subsequent experience has failed to corroborate their statement. Our own experience with a serum of this kind (which we put out for some time) was anything but encouraging. Judging from reports received, it exerted no perceptible influence upon the severity or the duration of the disease.

At the recent meeting of the American Pediatric Society, in Detroit, in 1904, it seemed to be the concensus of opinion that the use of antidysenteric serum was very disappointing indeed. It is true that certain sera have been elaborated, the use of which has been followed by very gratifying results in a certain number of cases. It is also true, however, and at the same time unfortunate, that other series of cases treated with the same serum apparently showed no effect from its administration. The best results have been obtained from the use of a polyvalent serum made by immunizing horses with the toxins of several strains of the bacillus. Of course, it is understood that we refer to bacillary dysentery and not to the amoebic variety, of which there are doubtless a great many more cases in this country than is generally supposed. Antidysenteric serum most decidedly is experimental.

Antiscarlatinal Serum. A strictly antiscarlatinal serum was first prepared by Moser (5). He made use of several streptococci, all originating from cases of scarlet fever, with which he immunized horses. This serum was tested clinicallyby Escherich. He reports that the mortality was reduced by means of it to 9 per cent, whereas in other hospitals at the same time, where the serum was not used, the death rate amounted to 14 per cent. Very few authorities still consider the streptococcus as the etiological factor in scarlet fever. The influence of an antistreptococcic serum must then be merely of an indirect nature, placing the system in a more favorable condition to cope with the main infection by counteracting the secondary infection. Strictly antiscarlatinal sera do not seem to exert a more favorable influence upon the disease than immune sera obtained by immunization with streptococci from sources other than scarlet fever. It is still highly experimental.

I am well aware of the fact that supplies of antipneumococcic, antiscarlatinal and antidysenteric sera can be purchased in the market from manufacturers who have no hesitancy about recommending their use, but an impartial survey of all the evidence in behalf of their efficacy causes me to apply the Scotch verdict of "Not Proven."

Antityphoid Serum. No definite results have as yet been obtained by any specific serum therapy of typhoid fever. Chantemesse and Widal (14) first produced a serum from guinea pigs by injecting cultures of bacillus typhosus. Their results were negative. Klemperer and Levy (15) shortly after had no better success. Hammerschlag (16) tried the injection of serum from patients recovered from the disease, without being able to show that it possessed any special protective properties.

Wasserman (17) explains the lack of success in the use of antityphoid sera by the fact that they are bactericidal sera, which, al-

though they may be rich in immune bodies, do not meet in the human organism a sufficient amount of activating complement. Pfeiffer and Kolle (18) went even further and showed that all bactericidal sera, under certain circumstances, are in a position to cause rapid lytic action upon the bacilli present in the system, with consequent liberation of the intracellular toxins and aggravation of the disease.

The only method which gave any considerable promise of success seemed to be to isolate the intracellular toxins of the bacilli, and by means of these to produce an antitoxic serum. Brieger, Kitasato, Wasserman (19), Kolle and Pfeiffer were unable to obtain these toxins in any appreciable quantities.

Chantemesse (20), by growing typhoid bacilli in a maceration of spleen substance, to which had been added defibrinated human blood, claims to have obtained a typhoid toxin, 1 cc. of which will kill an 80 gm. guinea pig. He made a serum by injecting this toxin into horses. Out of 507 cases treated with this serum he reports a mortality as low as 6 per cent.

Antityphoid sera were prepared in our laboratory by injecting progressively increasing doses of several strains of typhoid bacilli. A serum was obtained which agglutinated the respective bacilli used for inoculation, depending upon the particular bacillus agglutinated, in dilutions of from 20,000 to 4,000,000. This remarkably powerful agglutinating serum showed no protective properties in guinea pigs receiving a M.L.D. of typhoid culture. Clinical results obtained with the same serum were very unsatisfactory, so that for the present time our work along this line has been discontinued.

The following conclusions may be drawn:

1. The bactericidal sera on the market at the present time, called antityphoid, are generally unsatisfactory in their effects, indeed it is doubtful whether they can be said to have any influence at all upon the course of the disease.

2. Good results are reported with Chantemesse's antitoxic serum, but there is not yet sufficient material on which to base an opinion.

Serum for Cerebro-Spinal Fever. The bulk of work which has been done upon immunization against the diplococcus meningitidis we owe to Lepierre (48). He produced a serum in small animals (rabbits and guinea pigs) by the injection of whole cultures, which possessed both antitoxic and bactericidal properties. The animals did not bear this method of immunization very satisfactorily, several of them developing cachexia and succumbing during the course of the treatment. Immunization was also attempted with cultures killed by heating to 66-68° and also with chloroform killed cultures. The antitoxic, preventative and curative properties of sera thus prepared are not considerable, as shown by animal experiments. There is no record of such a serum being used on man.

From this we see that the experiments made up to the present time upon the production of immunity against a serum for cerebro-spinal meningitis are not only few in number but very unsatisfactory, and allow of no definite conclusion.

In the daily press, Dr. Darlington, of the New York State Board of Health, is quoted as saying that a commission formed to investigate the epidemic of cerebro-spinal meningitis, raging in the city, has decided, after exhaustive investigation and experimentation, that the so-called serum treatment of this disease is practically worthless.

Antivarioloid Serum. A lack of definite data upon the etiology of small-pox makes it impossible to adopt any specific serum therapy. Cows used for the production of vaccine have been bled some two weeks after recovery, and their serum has been shown to possess some antivarioloid properties. These, however, were weak and no marked influence upon the course of variola has been observed after the use of such sera.

Serum for Cancer. Charcot (46) prepared a cancer serum finely dividing the tissue of a primary carcinoma of the breast and injecting an emulsion into goats, sheep and horses. The serum collected aseptically was injected in doses of 20 to 30 cc. (90 cc.

weekly) for several months into patients afflicted with inoperable cancers. The blood serum of patients thus treated showed, after four or five injections, haemolytic properties toward the red corpuscles of animals whose serum was used for injection.

Adamkiewicz (47) reports upon a number of cases of cancer which were favorably influenced by the administration of cancroin, as prepared by himself. A number of these cases he considers completely cured. His results, however, have not been confirmed by other observers, and no very marked influence upon the disease can be attributed to any of these preparations.

The only remedy which can be said to have established any pretense to efficacy in the treatment of malignant growths is Coley's fluid (Erysipelas and Prodigiosus Toxins). This has been found of some value, especially in the case of sarcomata.

Until it is proved that cancer is an infective disease, serum treatment of the usual kind is inapplicable to this condition. Doyen inoculated horses with his micrococcus neoformans, which he considers the etiological factor in the production of cancer. The serum thus obtained was tried clinically with what *he* considers favorable results. These results, however, are not convincing. It is permissible to hope that it may be possible to produce a cytolytic serum which may act on the cells of the growth without affecting the normal cells of the tissues. A satisfactory serum of this nature is yet to be prepared. Cancer sera are most decidedly experimental.

Leprolin. By cultivation upon special media which he prepared, Rost (45) has succeeded in obtaining from the bacillus leprae, a concentrated toxin which he named Leprolin. This he used in the same manner as Koch used his tuberculin for the cure of consumption. Gradually increasing quantities of this toxin are injected into patients. A reactionary fever is observed after such injections, which showed rise to 100° F. If the reactionary fever is not marked, larger doses are given and improvement of the symptoms has always followed. This remedy will require much more extended clinical investigation before definite conclusions can be drawn relative to its value.

Serum for Syphilis. Justin DeLisle studied the etiology of syphilis and claims that the disease is due to a bacillus always present in the blood of syphilitics, although not visible by microscopic methods until it has been cultivated in collodion sacs. After the preliminary cultivation in collodion sacs they are readily visible as short slender rods and easily grown upon the ordinary culture media. With cultures of this bacillus he made attempts to immunize horses. He claims that a serum thus obtained shows marked curative properties in luetic cases. His results have not been confirmed by other observers.

With a pseudo-diphtheria bacillus isolated from the blood of cases of secondary syphilis, which he considers the etiological factor of the disease, Paulsen prepared an antisyphilitic serum. A report was published by him upon the clinical value of this serum which he used in 14 cases of syphilis. The etiological relation to syphilis of the particular organism used by this investigator is not recognized by other observers. The therapeutic results obtained by means of the serum are very questionable. One case was "cured in three weeks." It is, however, not shown what Paulsen considers a cure (nothing is said as to the length of time these cases were under observation), probably his cure merely amounted to a disappearance of the secondary eruption. In other cases they were obliged, "notwithstanding the favorable influence exerted by the serum, to have recourse to mercury, as the healing process was somewhat slow." Thus, notwithstanding the use of the serum, mercury seems to have been the only effective weapon against the disease.

Anthrax Serum. In 1893 and later in 1899, Kitt (40) undertook a series of experiments which showed that an immune serum can be prepared from sheep, goats, horses and cattle when these animals are treated by intravenous or subcutaneous inoculations of virus (toxic infectious tissue juices). After a few injections the blood of

animals so treated rapidly acquires a large quantity of immune bodies.

In 1900 Arloing, and in 1901 Leclainche-Vallee (41) carried on similar experiments and prepared a horse and goat serum, 1-5 cc., of which protected guinea pigs against undoubtedly fatal doses of anthrax. The immunity conferred by such sera appeared as soon as twelve hours after injection but lasts only about eight days. The curative properties of such sera are not very marked, as is shown by Arloing. A serum injection given less than nine hours after injection was able to protect the animals, whereas if 12 hours had intervened between the inoculations with virus and the serum injection, no beneficial effect was observed, even when the latter was used in large doses.

From the above it appears that a satisfactory anthrax serum has not as yet been produced. The only manner in which they have given any measures of success is in simultaneous (serum and virus) prophylactic inoculations. In this method a preliminary injection of serum is given which allows of using subsequently a much stronger virus for vaccination.

Treatment of Yellow Fever with Antiophidic Serum. Rodrigues' statements in regard to the efficacy of the treatment of yellow fever with a serum made to combat the bites of poisonous snakes of Brazil, have not been confirmed by the experiences of others. Carlos Seidl and Marchoux and Simond gave the method a trial, but met with negative results. The first to suggest serum treatment of yellow fever was Professor Miguel Couto, of Rio, who treated several yellow fever patients with serum from convalescents. His communication on the subject was published in the Brazil Medico of April 22d, 1892. Rodrigues reports rapid recovery of 24 yellow fever patients, with but one exception, under treatment with anticrotalic and antibothropic sera.

Antimalarial Serum. Ford, of the U. S. Army, has been making a strenuous attempt to provide a serum for tertian malaria. This investigator has been working for some time and has evolved certain results of more than ordinary interest. As yet, however, little has been discovered in the way of immunizing or curative sera for disease of protozoon origin. (Medical Record, Dec. 24, 1904.)

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REFERENCES.

1. Deutsche Medicinische Wochenschrift, 1901, Nos. 43-45.
2. Deutsche Medicinische Wochenschrift, 1903, Nos. 1 and 3.
3. Centralblatt f. Bacteriologie, Ref. Bd. 34, 1904, H. 16 and 17.
4. Centralblatt f. Bacteriologie, Ref. Bd. 34, 1904, H. 16 and 17.
5. Berliner Klin. Wochenschrift, 1902, S. 13.
6. Berliner Klin. Wochenschrift, 1891.
7. Archive de Med. exper. et de anatomie pathol. 1892.
8. Zeitschrift fur Hygiene, 1893.
9. Annales de L'Institut Pasteur, 1893.
10. Zeitschrift fur Hygiene, 1897.
11. Ref. Med. 1897-1898.
12. Ref. Med. 1891.
13. Zeitschrift fur Hygiene, 1894.
14. Annales de L'Institut Pasteur, Nov. 1892.
15. Berliner Klin. Wochenschrift, 1895.
16. Deutsche Medicinische Wochenschrift, 1893, No. 30.
17. Deutsche Medicinische Wochenschrift, 1900, No. 18.
18. Zeitschrift fur Hygiene, 1896, Bd. 21.
19. Zeitschrift fur Hygiene, 1892, Bd. 12.
20. Deutsche Medicinische Wochenschrift, 1901, Verinsbeil, No. 44.
21. Berliner Klin. Wochenschrift, 1896, No. 32; 1902, Nos. 42 and 43.
22. Deutsche Medicinische Wochenschrift, 1903, No. 25.
23. Berliner Klin. Wochenschrift, 1902, S. 13.
24. Berliner Klin. Wochenschrift, 1902.
25. Compt. Rend. Acad. 1894.
26. Annales de L'Institut, 1895.
27. Annales de L'Institut, 1889; Ibid 1891; 1894 and 1895.
28. Deutsche Medicinische Wochenschrift, 1892; Centralblatt f. Bact. 1893; Berliner Klin. Wochenschrift, 1894.
29. Annales de L'Institut, 1895 and 1897.
30. Centralblatt f. Bact. Bd. 30, 1901; Zeit. f. Hyg. Bd. 40, 1902.
31. Zeitschrift fur Hygiene, Bd. 37, 1901; Bd. 42, 1905.
32. Cr. d. Biologie, 1890, pp. 316-360; Ibid 1891, pp. 335.
33. Berliner Klin. Wochenschrift, 1899, S. 1073.
34. Journ. Amer. Med. Association, 1898 and 1899.
35. Berliner Klin. Wochenschrift, 1903, No. 48.
36. Deutsche Medicinische Wochenschrift, 1890 and 1891.
37. Deutsche Medicinische Wochenschrift, 1901, No. 25, S. 405.
38. Berliner Klin. Wochenschrift, 1899, S. 1120 and 1141.
39. Deutsche Medicinische Wochenschrift, 1899, S. 340.

40. Centr. f. Bact. 1887, No. 23; Monatsch. Prakt. Thierheilk, 1893; 1896 and 1901.
41. Annales de L'Institut Pasteur, Aug. 1902.
42. Semaine Medicale, 1895, p. 330.
43. Munchener Medicinische Wochenschrift, 1903, No. 4, p. 148.
44. Munchener Medicinische Wochenschrift, 1903, No. 4, p. 149.
45. Indian Medical Gazette, June and Dec. 1904.
46. C. T. de la Soc. de Biol. 1902, No. 1, p. 15.
47. Berliner Klinische Wochenschrift, 1902, No. 24.
48. Journal de. Physiol. et Path, gen. 1903.
49. Munchener Medicinische Wochenschrift, 1903, Nos. 25 and 26.
50. (?) Medical Journal, March 5, 1904.
51. Medicinische Klinik, Dec. 1, 1904.
52. Therapeutische Monatsch, Dec. 1904.
53. Munchener Medicinische Wochenschrift, Aug. 16, 1904.
54. Von Graefe's Archives fur Ophthalmologie, Vol. 54, No. 1.

Discussion on Dr. Larned's Paper.

Dr. L. E. Ryan, Galesburg: Mr. President and Gentlemen: I was very much interested in this paper, and there is little that can be said in addition. I merely wish to ask Dr. Larned whether he knows of any case where real benefit accrued from the use of anti-tuberculosis serum in cases of mixed infection in tuberculosis.

Dr. E. J. Brown, Decatur. I am very much interested in the use of tuberculin, both for diagnostic and therapeutic purposes. Unfortunately this whole matter is still in an experimental stage, and many men have discarded the use of tuberculin entirely although others, like Trudeau and von Ruck, are using it regularly. I used it for diagnostic purposes recently in the case of a young woman who was suffering severely from ascites and general oedema, for which she had been tapped eight times; diagnosis had been made of syphilitic cirrhosis of the liver.

I began by giving ½ milligram of tuberculin, and continued it up to 4 milligrams before I got a reaction, and it was a very pronounced one. Much to my surprise the patient improved wonderfully, and has returned to her work. The edema has disappeared almost entirely, and the ascites has lessened considerably. My diagnosis of tuberculous peritonitis was confirmed. I believe that tuberculin should always be used in these cases.

Some German physicians were giving tuberculin for the purpose of confirming a diagnosis of lupus, and they found, after one or two injections, that the lupus was cured. Dock, of Ann Arbor, Mich., did the same thing. In making a diagnosis of lupus by means of the tuberculin test, he found that the lupus disappeared.

Working along the same line, I gave tuberculin in three cases of lupus, two of which had been treated by the X-Ray. One small patch on the face disappeared completely under the tuberculin treatment. I begin by giving ½ milligram of tuberculin, and if I do not get a reaction, I increase the dose. The rule is to give ½ or ¼ of a milligram every six or seven days.

In another case, one of lupus erythematosus, I gave 125 X-Ray treatments. The lupus disappeared completely, but in a few months the patches returned on different parts of the face. I now have this patient under the tuberculin treatment, and she is improving steadily.

In regard to diphtheria antitoxin, Dr. Larned said that it should be given in every case, even before the diagnosis is made. There is nothing so difficult as to make a diagnosis of diphtheria, in the first twenty-four hours. Is it a staphylococcus sore throat, tonsilitis, scarlet fever angina or diphtheria. I make a culture of every throat case, but never wait for the diagnosis. It takes from sixteen to twenty hours to get a result. I also make a smear from the throat; but I always feel safer in suspicious cases after I have given three or four thousand units of antitoxin, even if the case proves to be one of tonsilitis.

Dr. Ethan A. Gray, Chicago. I have been using tuberculin for several years in the treatment of pulmonary tuberculosis. Many cases have shown very excellent results, but often there is a mixed infection which hampers the action of the tuberculin. The rule is never to give an increasing dose if there be a rise of temperature. The difficulty is in keeping down the fever. Some cases continue for days and days with a high temperature. However, after the temperature has been reduced, there is a considerable tendency to improvement under tuberculin.

In view of the distinct improvement after the mixed infection is cleared up, I have some doubt as to the efficiency of tuberculin as a constant therapeutic measure, and some also as to its diagnostic value. It undoubtedly has an important place in our armamentarium.

Dr. Larned's query as to the value of antistreptococcic serum for other bacteria than the streptococcus, might answer his query as to pollantin. It would seem to me, judging from my knowledge of the matter, that pollantin would be of real benefit if it were made from the poisons of many plants. In the case of an attack of hay fever due to a poison not included in the pollantin, it certainly would be useless. The same is true of sera, especially antistreptococcus serum; the serum to be effective must be polyvalent.

Dr. J. H. Bacon, Cleveland, O. I have seen much tuberculin used for diagnostic purposes, and it certainly is a great help in diagnosis.

The literature on the Pathology and Treatment of Exopthoimic Goitre is growing very rapidly. I had not been aware that the treatment of exopthalmic goitre with the milk and serum from thyroidectomized animals gave such good results as just given. There have been so many cases showing one or two of the symptoms of exopthalmic goitre and a tumor of the neck in the region of Thyroid gland diagnosed exopthalmic goitre in the past that we must be careful in interpreting results of treatment. I have seen several such cases with wrong diagnosis of late. It is because of these wrong diagnosis that the whole subject is cloudy. Ex-

opthalmic goitre is a definite pathological entity. The serum treatment seems to me, should prove a good field for scientific investigation. If it is successful, it will have to be taken regularly or Thyroid extract in degeneration of the thyroid.

Dr. W. C. Abbott, Chicago. I have listened with a great deal of interest to this paper on serum therapy, and shall read the complete elaboration in the Journal with added interest from having heard the outline. I believe we need to know a great deal more about serum therapy so as to know better when not to use sera. We are in great danger from running off after fads.

I am a strong believer in serum therapy, just so far as it is proven to be a good thing and an adjunct to our treatment of various affections, but we must understand that the patient is the battle-ground of the difficulty, and we must not be led astray. I am sure that the essayist does not desire us to be led astray in our belief that the various sera proposed are intended, in the main, to be specifics for the treatment of definite conditions. They are specifics and they are not specifics.

Some two or three sera have been demonstrated to be specifics because they have been isolated and elaborated; but the essayist has brought out the fact, which must not be lost sight of that these are merely prominent symptoms, a part of the great group of symptoms which constitute the condition against which we are contending.

In that lies, in the main, the absolute futility of any sort of serum against that group of symptoms which we denominate as pneumonia. The essayist alarms us by saying that we are losing 40 per cent. of our pneumonia cases. Perhaps we are in the atmosphere where serum therapy is rampant, and where serum therapy, or some other "pathy" is looked upon as necessarily specific, but the general practitioner throughout this broad land, treating symptoms as they arise, infective and inflammatory manifestations as they present themselves to him, is not losing 40 per cent. of his cases, nor half of 40 per cent.

Dr. Frank Goodell, Effingham. The essayist certainly has laid low any man by saying that people who do not believe as he does are criminals; that persons who do not use anti-diphtheritic serums are criminals. I have treated 127 cases of diphtheria without serum and did not lose a single patient. Perhaps I am criminal, but my patients do not think so.

It seems to me that a man ought to use that form of treatment which cures his cases, regardless of the opinion of others, even if he be in the minority. If a man uses a particular treatment and it seems successful in his hands, it is not a sure thing that it ought to prove successful if used by other physicians in the treatment of the same disease.

Liberality is the foundation of intelligence, and when one man thinks that another is a criminal because he does not think as he does, that man has not enough liberality to come up to my idea.

In the Wilard Parker hospital, one of the greatest in the United States, the physicians in charge, who administered antitoxin, refused to give it to their own family at home when they saw the hospital patients die, and the nurses refused it also when they contracted the disease. I know of a few cases where it seemed to me that the antitoxin treatment was a very bad one. I know that little tombstones are scattered around as the result of that treatment. In the immediate country where I live, those who have used the antidiphtheria serum have had the worst success.

Some men follow fads, and they are always looking for something new They are led astray from the solid old landmarks. If a man is satisfied with his treatment, he is not looking for something new all the time. It is the man with the poorest success who wants something better. I have no objection to any man using this serum if he is successful with it. I am successful without it.

I asked a very learned and scientific gentleman connected with one of the colleges in St. Louis, what his opinion was of diphtheria antitoxin. He said he had given it frequently and had observed its effects when given by others, and it seemed to him that it neither killed nor cured; that it is absolutely neutral.

My treatment of diphtheria does not differ from that followed by many others. I have nothing which cures all my cases, but I cure so many cases that I am satisfied. I cure as many cases as any one would expect to cure. I saw a statement made by a physician that during an epidemic of diphtheria forty years ago in the city of St. Louis, they treated these cases with sulphur and sage, and they cured more cases with that treatment then than have been cured by diphtheria antitoxin since its introduction. I also give iron. I keep the fever down and the strength up. I use sulphur, potash, veratrum viride gelsemium, hydrastis, etc., and my patients get well, use sprays and gargles, washes and applications, and treat cases constitutionally and locally.

Dr. Burkhardt, Watson. This is quite an interesting subject. I believe I occupy a middle ground. I have never been a strong advocate of antitoxin, although I believe in a physician using such methods as have given him the best success in his practice. I cannot call to mind of ever having lost a single case of diphtheria in the twelve years I have been engaged in the practice of medicine, in which I was called early. The few cases which I have lost were those which I saw late—too late, after the system was saturated with the poison.

My treatment is not the use of antitoxin, although I have used it in cases which I was called too late where the disease had existed for several days, and the involvement of the throat was considerable; but all the cases in which I have used it died. Whether it was due to the fact that I gave antitoxin, or that I saw the case too late, I am unable to say; but I believe death was due to the septic infection which existed, on account of the lateness of treatment and not to the antitoxin as I consider it perfectly harmless if properly used.

My treatment is the antiseptic treatment, both internally and locally. I use peroxid of hydrogen as a spray, with an atomizer or a swab. I follow that with a solution of the chlorate of potash and iron internally, or iron and mercury. When any other symptoms arise, I treat them as indications may demand.

Dr. Clarence L. Wheaton, Chicago. Although the antistreptococcic serum has proven somewhat of a failure in the treatment of puerperal infection, according to the reports of the American Gynecologic Society, diphtheria antitoxin is a specific in the treatment of diphtheria, and it is unbecoming our dignity at this late day to advance any arguments to the contrary. We might as well argue that iodid of potassium and mercury are not specifics in syphilis. We have at our command the reports as to the efficacy of the antitoxin treatment of diphtheria from the great medical centers of New York, Chicago, Europe, and elsewhere, and the men who have made these reports are scientists.

When in our practice we are called to a child choking to death, administer a few cubic centimeters of serum and see the membrane slough off inside of twenty-four hours, the cyanosis clear up and the dyspnea disappear, we cannot do otherwise than believe in the efficacy of the serum. If the child dies, it is because of the toxemia incident to the severe infection. There is no need to discuss the antitoxin treatment of diphtheria. We all subscribe to its efficacy.

Dr. J. W. Pettit, Ottawa: I am sorry to note that in the discussion of Dr. Larned's excellent paper some of his critics give evidence of having accepted the teachings of certain trade journals which are not looked upon with favor by educated and progressive medical men. I fear they have not sufficient professional pride to subscribe for first class medical journals, but prefer to read those which are furnished gratis and are full of such erroneous ideas as we have just been compelled to listen to. I regard it as little less than an outrage that an educated body of physicians, representative of the medical profession of this great State, should be compelled to sit here and listen to such crude and unscientific statements. I do not feel that it is proper to allow this opportunity to pass without administering a rebuke to such effrontery and ignorance. For my part I prefer to follow the leadership of such men as Dr. Larned, who are doing such excellent work in this field. Dr. Larned's paper is simply a report on the present status of serum therapy. He does not claim that every serum is a specific. He presents the results of his investigation with that modesty characteristic of the truly scientific investigator. We ought not to discard the opinions of men who devote their lives to the investigation of these matters and accept the idly expressed opinions of men who have never done any scientific work in their lives.

Dr. Larned, closing the discussion: I have absolutely nothing to say in reply to the remarks made by Dr. Goodell.

As regards the antiseptic treatment of diphtheria, it simply shows that the men who use that method of treating diphtheria do not know what diphtheria is. How is it possible to cure diphtheria by spraying antiseptics into the throat when it is the toxins floating in the blood stream that are causing all the trouble? How can a throat spray counteract the toxins circulating in the blood current?

With regard to the pneumonia death-rate, I will go on record as saying that the death-rate is 40 per cent. Dr. Osler made that statement, and was very vehement in his argument. As far as I am able to learn from reports, the average death-rate everywhere is less than that. I know that many men do not have such a death-rate, but, nevertheless, pneumonia has a death-rate which is simply fearful. I am confident that the average death-rate in the cities and country is over thirty per cent. The reports of the Chicago Department of Health show that it is alarmingly great.

With reference to pneumococcus serum as a therapeutic measure, I must confess that many reports have been made that are extremely encouraging and apt to lead a man to make enthusiastic statements, but, in my paper, I have deliberately refrained from touching on anything which would allow me to be accused of enthusiasm. I am a conservative enthusiast. I could tell you about pneumococcus serum until you would become enthusiastic and say that you would never use anything else in the treatment of pneumonia. Yet under the same circumstances, with the same nurse and the same interne, but without the use of the serum, after having treated a large number of cases, you would ascertain that the results are about the same. In other words, the serum did not prove any more effective than any methods of treatment.

With regard to the use of tuberculin as a therapeutic measure, a great many cases have been collected which show that the results are sufficiently encouraging to warrant further study and research along this line. We ought not to jump to conclusions, and say, when we have six or eight or ten or even twenty cases, that a thing is not good. Wait until you have several hundred cases, and several hundred control cases, before you venture an opinion.

As to exophthalmic goiter, those cases that have been treated with the serum, milk, or whole blood have shown a very satisfactory diminution in the severity of the symptoms, and some cases have improved so markedly as almost to warrant the verdict of a symptomatic cure.

Antidiphtheritic serum has served as a basis on which to judge all other sera are advocated, elaborated, experimented with and judged, but until we have as large an experience to base conclusions on in the case of other sera as we have in the case of antidiphtheritic serum, we should not say that they are either useful or useless.

The use of antistreptococcus serum in mixed infection in tuberculosis has been fairly well answered, and I know Dr. Gray will take up that phase of the question in his paper.

TYPHOID FEVER.*

BY G. G. CRAIG, M. D., ROCK ISLAND.

When assigned the duty of making a report to this meeting, I was requested to choose some practical everyday subject. Although much has been written upon typhoid fever, the physician who has gone through an epidemic without seeing an immense amount of ignorance, especially regarding its cause, is indeed very fortunate. A disease that each year takes off a larger percentage of the flower of our youth than any other, certainly deserves our most serious consideration.

Typhoid fever is caused by a germ, known as the Eberth bacillus, which is transmitted from the bowel of one to the mouth of another. It is conducted from the mouth to the small intestines, where it finds a favorite breeding place in Peyer's patches. In a large majority of cases this is accomplished either directly or indirectly through the medium of drinking water, and in epidemics of typhoid fever the public water supply is almost invariably the cause. The disease is absolutely preventable, and although the time will probably never come when it will be completely eradicated, still, by strict attention to well known principles of sanitary science, particularly in regard to water supplies, epidemics can be made very rare occurrences.

In June, 1900, it was noticed that a bad odor emanated from the clean water basin at our reservoir. It was also noticed that the same odor, but scarcely perceptible, except at night, came from the slough, that is the part of the Mississippi river between Rock Island and the Illinois shore. When the river is low there is not much current in the slough, and at that time the river was very low. Also, the U. S. government was doing some work in the upper part of the slough, and it was coffer-dammed, making the water practically stagnant. The clean water basin was emptied and thoroughly cleaned. While this was going on, the commissioner of health had his suspicions aroused regarding the intake pipe, which projects nearly a half mile through the slough, and into the channel of the Mississippi river. He was having the water analyzed regularly and at short intervals, with the result that it was invariably reported bad. Examination showed that the intake pipe was full of crevices, and the well into which the intake pipe emptied and from which it was pumped through the city, was full of holes, the cement having nearly all scaled off, leaving nothing but a rough stone wall, and about twenty feet of saw-mill refuse between it and the mouth of one of the main sewers of the city. This sewer conducted the sewage from St. Anthony's Hospital. The usual warning, "Boil the water," was freely given, but people as a rule don't scare at unseen danger. In September the epidemic was upon us. It continued about four months, during which time we had about five hundred cases, and about fifty deaths.

In regard to the treatment, or rather the management of typhoid fever, I would say that, in my opinion there is more opportunity for the exercise of good judgment on the part of the physician than any other disease that we, in this section of the country, have to contend. There is no known specific, and yet with careful handling I believe we can pilot through to a successful termination, nearly every uncomplicated case.

Most of the cases in this epidemic were severe from the onset. They generally started with chills and fever, with a temperature of 104 or 105 degrees, and some over 106 degrees. If it were an adult of ordinary strength, I generally gave on the first visit about five grains of calomel and twenty of quinine, to be given before bed-time, whether the call was made at noon or 6 p. m. I wanted the patient to sleep with that medicine in the system.

On the next call I found the temperature generally lower, but if over 103 degrees I would give about two grains of calomel and twenty-four grains of quinine during the day. I certainly think that mercury acts as an antiseptic in typhoid fever, and neutralizes some of the poison that is in the blood. It stimulates the action of the liver and kidneys, and I have invariably found it, when given in that way, to change a wild, almost

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

malignant case into one easy to control, and relieved of its virulent character. In the meantime, I use water freely, both internally and externally. If the temperature is still inclined to keep up, I frequently use an ice bag over the region of Peyer's glands, with two or three layers of Turkish toweling between it and the skin. I don't keep up the mercury, for I think its continued use is depressing.

Digestion is particularly weak in typhoid fever, and after the disease is relieved of its acute and dangerous symptoms, I give muriatic acid and pepsin in a pleasant form, which I find very agreeable to the patient.

I use baths freely all through the disease. It has been demonstrated beyond question that the Brand system gives the best results. I have found one serious objection to it, however, and that is the difficulty of handling the patients. It is no easy matter to pick up a man weighing 160 pounds, put him in a bath tub, and back into his bed again. There is the possibility of dropping him, and it frightens them. To obviate this difficulty, I have had an apparatus made, a sort of windlass, with which two persons can raise a patient up as easily as they would handle a forty pound child. I submit photographs of this apparatus. I never use it in private practice, unless I have the privilege of selecting the attendant.

Dr. Baruch, to whom more credit is due than to any other in the United States, for intelligent information on the use of water in the treatment of diseases, has repeatedly called attention to the fact that the cold water as used by Brand is not on the theory of freezing the fever out of the patient, a fallacy that will not down, but it is used as a stimulant to the nervous system.

Judgment should be exercised in the use of the Brand bath. A patient with a feeble pulse, 150 beats to the minute, should not be put into a bath of 60 degrees. The fire of life is low in such a case, and you must use kindling wood or it will go out. In such a case handle gently. Have the bath 90 degrees or 95 degrees. Use mild friction, although it may be rapid. Watch the pulse, and if it increases in volume and decreases in frequency, the next may be given a little more vigorously.

About twenty years ago I commenced flushing the bowels as a part of my routine treatment. I have that done with water at a temperature of 90 degrees to 95 degrees, and about 3 o'clock in the afternoon. It nearly always lowers the temperature, and frequently the patient will drop into a pleasant sleep after it. I certainly think that anything that will remove a mass of offensive, acrid matter, a day before nature would do it, must be beneficial.

Occasionally during the course of the disease the temperature becomes alarmingly high. I then repeat the quinine, about 24 grains, with one grain of calomel, to be given before bed-time, and next day resume the mild treatment. If the tongue is red and bowels tympanitic, I use turpentine. In case of hemorrhage, acetate of lead and opium and tannic acid. I keep the mouth clean, and if the nostrils are inflamed, I use a soothing ointment. All these little things are cared for. The patient is more comfortable, and nature allowed to concentrate its efforts to combat the main disease.

In regard to diet, I consider milk our sheet anchor. If possible, I get morning milk for the day, and evening milk for the night, bottled as soon as possible after leaving the cow. I sometimes give white of egg in water, some prepared foods and malted milk, but I rely on cow's milk. Any treatment must be modified to suit special cases. When nature seems to show exhaustion, I try to keep it up with stimulants. I think pure whiskey is the best. I have thought sometimes that the alcohol in the whiskey had a tendency to neutralize the toxemia or poison of the disease.

I always demand a good nurse, and the faithful execution of every little detail. The physician has a right to demand that in a disease of such severity. We know it will linger at least three weeks, and possibly three months. The battle will be hard and long, but I believe with intelligent care, economy of strength, and watchfulness against surprises, that victory will generally be our reward.

We earnestly hope for the discovery of some serum, some specific by which humanity may be relieved of the terrors of this disease.

Discusion on Dr. Craig's Paper.

Dr. A. W. Baer, Chicago: I wish to make a suggestion in regard to Dr. Craig's treatment of flushing the bowels. It is something I have never known anybody to do as a regular thing, but I think the suggestion is a good one. I would add this to it, to use Labaraque's solution one-half ounce to a quart of warm water will relieve the lower bowel of the irritating mass that is there. Two injections a day, and at the end of forty-eight hours you have partially formed stools because the antiseptic flushing of the bowels; is to assist nature in getting rid of that which is causing trouble a little sooner than she would do it unassisted.

Dr. Craig, closing the discusion: My experience has been that there are always some who are looking for something that diverts our attention from the real cause of the trouble. In regard to the trap that we in Rock Island fell into some time ago. We learned at the time that the stools of typhoid patients were not disinfected. Patients were taken into the hospital and their discharges thrown into the sewer and pumped into the city again, thus infecting others. It was really, what might be called an endless chain. The waterworks authorities seemed to want to hide it. But we finally succeeded in getting conditions righted and the sewer pipes have been fixed. It was full of crevices, and one pipe was broken. It was in that condition when it was put in. It had a large crack in it, and one end was closed up tight.

I have practiced flushing the bowels for about twenty years in the treatment of typhoid fever, and now nearly all the physicians in Rock Island use it. It almost invariably gives the patient a great deal of comfort that could not be secured in any other way, nor so soon.

SURGERY OF THE SPLEEN.*

BY M. L. HARRIS, M. D., CHICAGO.

During the time when the spleen was considered an essential organ to the human economy it was seldom molested by the surgeon, but when it was discovered that this organ could be dispensed with without any perceptible disadvantages to the body its removal became a more frequent occurrence. Like many other good things in surgery, the knowledge that the spleen could be successfully removed was brought about by accident.

Extensive lacerations of the abdominal wall permitted the spleen to prolapse through the wound. It became necessary to remove the organ. The patient recovered and continued to live without apparently being any the worse for the loss of the spleen.

From this beginning splenectomy gradually became an established operation and injuries to the organ became the most frequent ground for its performance.

Injuries of the spleen may be compound or subcutaneous. Bullet wounds and stabs furnish the most common illustrations of the former variety, while crushing injuries such as are produced by the caving in of an embankment, the wheel of a wagon, a kick by a horse or a severe blow in the region of the spleen are the most frequent causes of the latter variety. Whether the injury be of the penetrating or of the subcutaneous kind, the chief danger to the patient lies in the internal hemorrhage which may take place.

The spleen is a very vascular organ in health and also much more so in some diseased conditions. It is also very fragile, easily torn and lacerated. Other things being equal, the larger the organ the more liable it is to be injured and quite a large percentage of subcutaneous injuries have occurred in pathologically enlarged spleens. The location of a penetrating wound will suggest the possibility of the spleen having been injured while in the subcutaneous variety the nature of the injury, together with the signs of an internal hemorrhage, make a diagnosis sufficiently probable to demand the immediate opening of the abdomen in order to determine accurately the damage done and to remedy the same so far as possible. When on opening the abdomen it is discovered that the source of the hemorrhage is a lacerated spleen three lines of treatment present themselves, namely, suture of the torn organ, tamponade and splenectomy. Owing to the difficulty of reaching the spleen for suturing purposes and the great friability of the splenic pulp, suturing as a means of controlling hemorrhage in a lacerated spleen has not proven itself a desirable method. In some cases demanding the most rapid action on the part of the surgeon or in extensive open wounds leading directly to the organ the tamponade may prove a useful means of

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

controlling the hemorrhage. The treatment however which has given the best results and which therefore should commend itself first to the surgeon's attention is splenectomy.

Except when the organ is pathologically enlarged or fixed by abnormal adhesions the operation is not a very difficult one. As lacerations of the spleen when untreated almost always result fatally, no time should be lost in resorting to direct surgical means to control the hemorrhage.

True neoplasms of the spleen are not common but when present require no arguments to convince the surgeon of the necessity of their early removal, consequently will not be further discussed here.

The most important advance which has been made during the past few years in the treatment of diseases of the spleen is the introduction of splenectomy for the relief of certain anemic states associated with or possibly dependent upon an enlargement of that organ. The condition is known as splenic anemia or sometimes primary splenomegaly.

Some of these cases run quite a rapid course, terminating fatally within a few months, while others may extend over a period of several years.

The chief clinical features are a secondary anemia, usually of a moderate degree only, seldom becoming severe, and a spleen which progressively enlarges, often attaining quite enormous proportions. In some cases, particularly in females, gastric disturbances, often associated with vomiting of blood, are among the early symptoms and suggest the possibility of gastric ulcer. The usual symptoms which accompany the anemic state are always present, and varying with the degree of anemia. A blood examination usually shows from 2 1-2 to 3 million reds with a minus color index. Abnormal reds are not often seen. There is usually a mild degree of leucopoenia, the whites numbering sometimes as low as 2,500, but in some cases a leucocytosis has been found of from 20,000 to 25,000 without any material deviation from the normal in the relative proportion. The tumor which presents itself in the upper left side of the abdomen is recognized without much difficulty as the spleen. It may extend to or beyond the midline and as low as the crest of the ilium. Some cases develop ascites early owing to an involvement of the liver with obstruction to the portal circulation.

Whether these cases should be placed in a class by themselves or are but a variety of one general condition is not at present definitely determined.

A distinct pigmentation, particularly of the abdomen, has been noted at times, reminding one very much of the pigmentation found after the prolonged application of hot poultices.

Those cases which run a rapid course grow progressively weaker and weaker and die. There seems to be little definitely known concerning the cause of this disease. It is known, however, that the blood cells undergo destruction or lysis in the spleen. It is therefore an enticing theory to suppose that associated with the enlargement of the spleen there is a hyper-hemolytic action with the production of the anemia. This theory receives some support in the fact that the removal of the spleen results in a cure of the patient.

Within a few hours after splenectomy there is a rapid increase in the number of red cells. There then occurs a decline for a few days, followed by a gradual return to almost the normal. The whites also show a great increase immediately after the operation, sometimes of several hundred per cent, followed by a gradual return to the normal.

Within a short time after splenectomy a remarkable change which is permanent takes place in the relative proportion of the whites.

This consists in a great increase in the percentage of eosinophiles and a slight increase in the percentage of large mononuclears at the expense of the poly-morpho nuclears.

Thus in one case which I have now followed for six years the eosinophiles have remained on an average at about 14 per cent, while before the operation they formed but 1 1-2 per cent, which is the normal proportion.

The granules are very large and take the stain in a beautiful manner. The cause or significance of this eosinophilia remains to be determined.

The recovery of this patient has been complete and her health is all that could be desired.

There have been between 25 and 30 of these patients operated on now with a recovery of 80 per cent. Considering the fact that medical treatment up to the present time has been of no avail this is certainly most encouraging.

Considering, then, the excellent results which have followed splenectomy in injuries of the spleen which without operation are practically always fatal and the large percentage of cures in certain cases of spleen anemia, likewise a heretofore incurable condition, it may be said that the spleen furnishes a very successful field for the work of the surgeon.

TUBEROUS SUB-CHORIAL HEMATOMATA OF THE DECIDUA.*

BY S. R. HOPKINS, M. D., SPRINGFIELD.

The two specimens here presented are the product of the same woman who is 32 years of age and is the subject of a deformity, resulting from an attack of "Polymoyelitis Anterior Acuta" in childhood, as a result of which the entire right side of the body affected by the disease is much dwarfed. The pelvis shares in the general deformity to such a degree as to have caused me four years ago to be compelled to deliver her of a full term child by means of Caesarian Section. At the time of the operation acting upon her previous, urgent request, I crushed and ligated with strong silk both Fallopian tubes, thereby hoping to render her sterile.

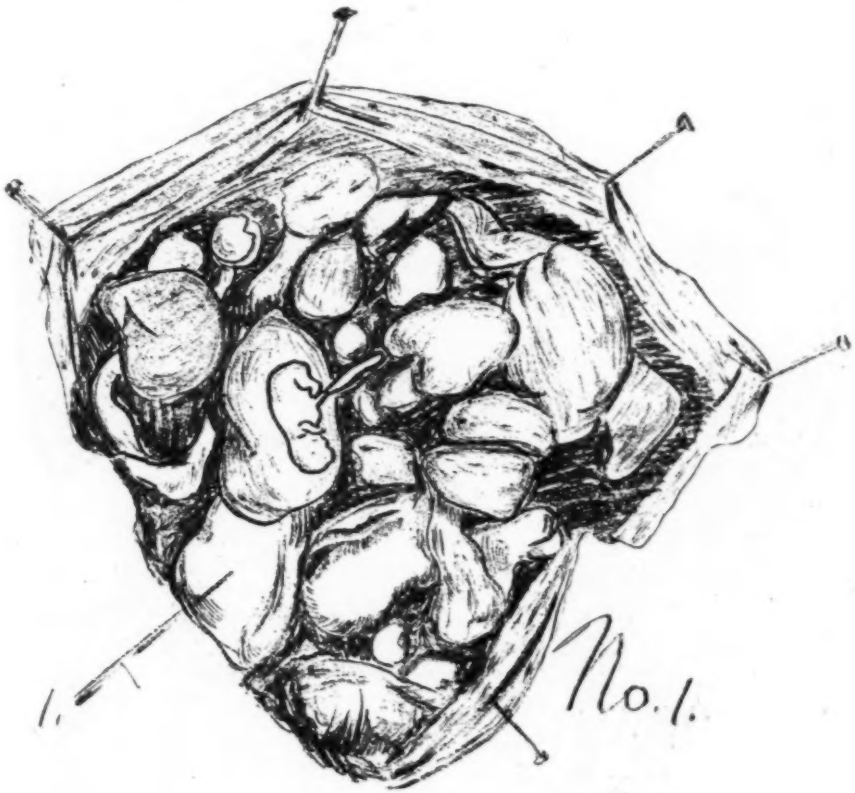
The child thus delivered in December 24, 1901, nursed for 13 months. The menses were first re-established when the child was 10½ months old, viz: on November 12, 1902, to again reappear on December 12th and January 12th but failed to appear in February and other concomitant signs of pregnancy appeared. An examination in the following June, no bleeding having occurred in the meantime, revealed the uterus to be three times its normal size and of rather soft consistency and in this condition it remained, without the slightest bleeding until August 30th, when the patient was seized with severe pelvic pains and some uterine hemorrhage and on September 2d nearly 8 months after the last menstruation, there was expelled from the uterus an oval mass measuring 5x3.25 centimeters, one side of which is of a rough ragged appearance, and covered with fresh blood, the remainder is represented by a smooth glistening surface which when incised gives exit to 8 c.c. of a clear yellowish fluid (the Liquor Amnii.) On everting this amniotic sac there is brought to view a surface completely covered by numerous purplish, irregularly round and smooth masses (Hematomata) varying in size from .2 to 1 centimeter in diameter. A number of collapsed folds of amnion are seen between them; by means of a primitive, hydropsical, umbilical cord is suspended from about the center, an embryo in a state of good preservation, 1.2 c. long. Microscopically, a section from point one shows from without inward that is from fetal to uterine side of the placenta, first the cuboidal cells of the amnion the connective tissue of amnion and chorion beneath which is Langhan's layer of cells, well preserved and covering a normal ribbon of syncytium; beneath this and represented macroscopially by the body of the hematoma is seen a large quantity of blood in which much fibrin is visible. Beneath this blood are seen many chorionic villi and intervillous spaces normally distributed and filled with blood elements. A few decidual islands can be made out. The villi for the most part are well preserved but in places their syncytium and Langhan's cells take the stain but faintly, and can with difficulty be recognized.

After the abortion just detailed, the patient menstruated regularly until May 1904, April 12th being date of last show. Following this there was no bleeding for two months and she exhibited the usual signs of pregnancy. Two months having elapsed a very slight

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

amount of uterine hemorrhage occurred, when an examination showed the uterus to be about three times its normal size. No more blood was seen until Nov. 1st when a profuse hemorrhage with severe pelvic pains set in and on the 8th (7 months after the last regular menstruation) I emptied the uterus of an oval mass measuring 5x3.5 centimeters in its greatest diameter, of rather firm consistency, three fourths of whose surface is rough and ragged covered with blood, the other one-fourth is represented by a jagged tear around whose edges remnants of a smooth membrane can be made out. On everting the mass it is so friable as to break in several places. The everted surface is covered by 8 purplish, smooth elevations, (Hematomata) varying in size from that of a pea to that of a large hazel-nut, between the elevations some collapsed folds of amnion are seen. Near one edge and concealed close to the base of one of these masses can be seen the embryo suspended by a minute hydropsical cord. The embryo itself being only of the size of a grain of wheat. The wall of this mole is one-half inch thick at its thickest part and the cut surface is of a reddish fleshy appearance.

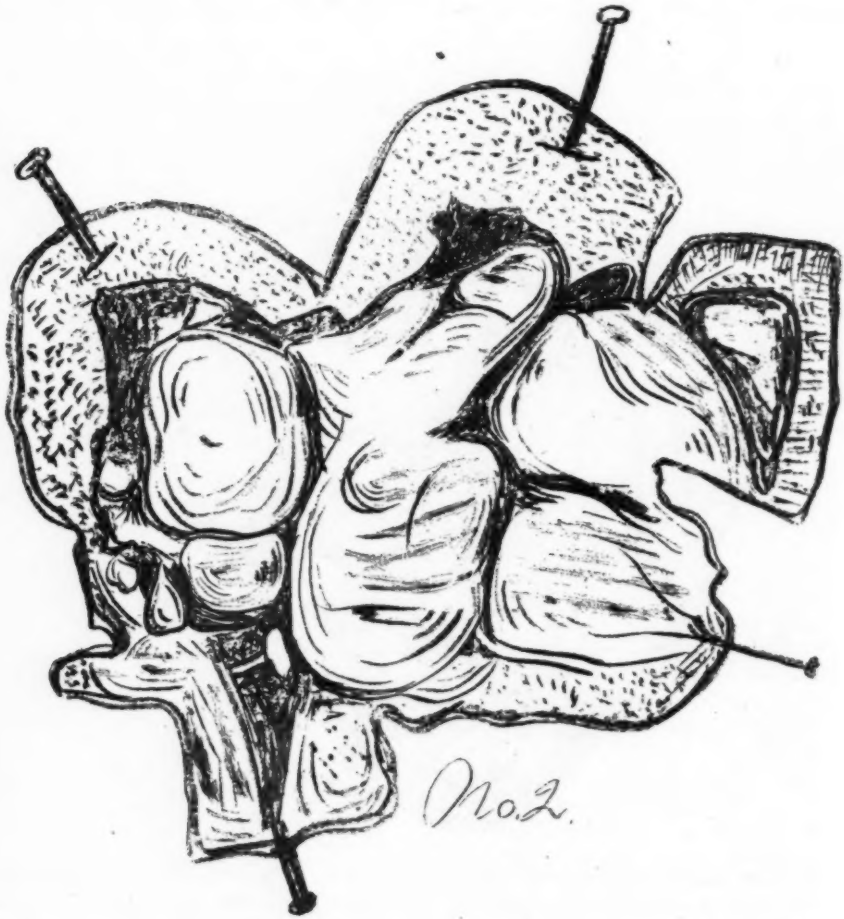
Examination microscopically of specimens from four different parts of the ovum shows but three chor. villi which can be recognized as such and even in these the nuclei of the syncytium and Langhan's layer take the stain very faintly. The remainder of the specimens being represented by blood elements and the Chorion and Amnion covering the hematomata show no nuclear stain, all of which bespeaks a much higher grade of degeneration than was present in Sp. 1.



These blood moles, species of highly deg. ovi are but little discussed in the literature.

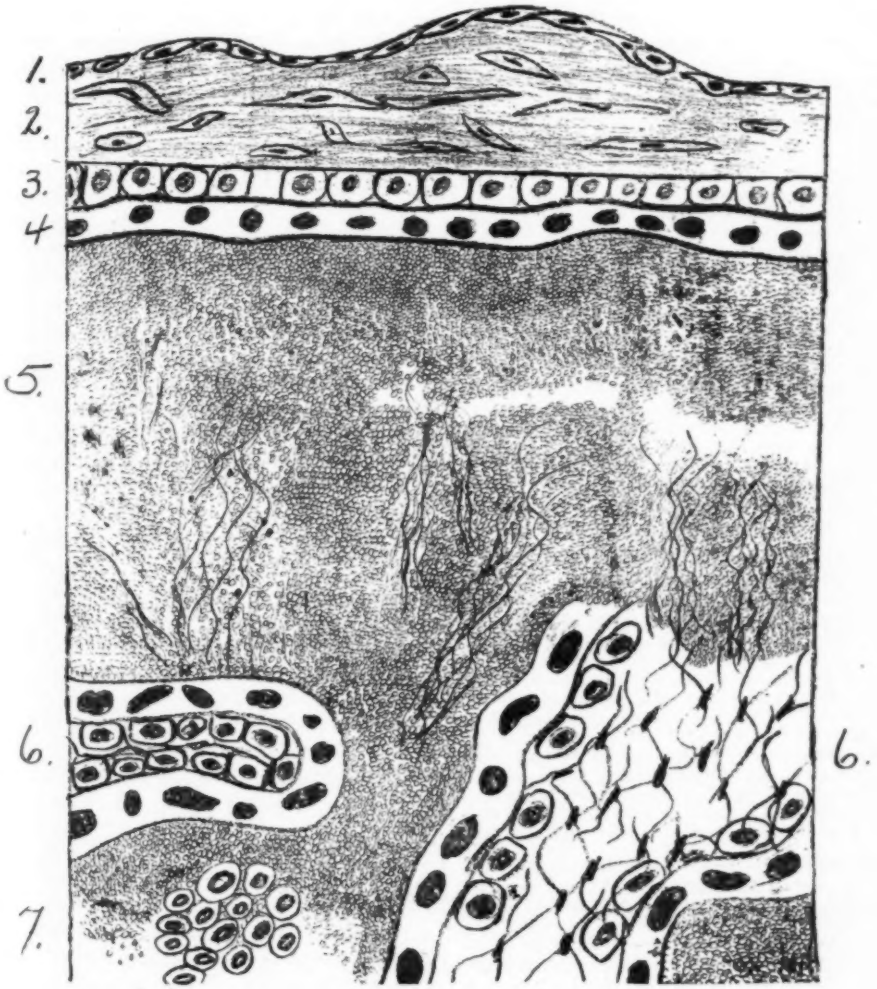
Breus has studied them quite exhaustively and designates them as Tuberous Sub-chorial hematomata of the decidua.

These abortions must occur very slowly so that the blood escaping between the dedidua and the periphery of the ovum has time to coagulate, which separation so disturbs the nutrition of the embryo to cause its death, but not the death of the placenta itself, which latter may remain in vital contact with the uterine wall as long as eleven months as was the condition in one of Breus' cases. Whether the hem. producing these hematomata is the primary factor in the production of the moles or whether it is a secondary occurrence into the already collapsed folds of the amnion does not seem to be definitely settled. A number, including Walther, holding that the hem. is the primary factor while Breus believes it to be secondary. The latter view seems most plausible because in many of these moles, (as in my two specimens) numerous empty folds of amnion are to be seen, besides the ones filled with blood and of these latter many seem not to be entirely filled but are covered by a loose wrinkled membrane.



Davidsohn in an article in the arch of Gyn. 1902 holds that the disproportion between the fetus and ovum is due to hydramnios after death of the former the amniotic fluid gradually absorbs, the redundant amnion is

The moles are usually readily recognized macroscope; but when the fetus has undergone complete dissolution as not infrequently happens, and without the menstrual history, one might mistake them for Decidua Polyposa or for Endometritis Cystica of Breus and Hegar, the microscope, however, clears every doubt.



thrown into folds and hemorrhage occurs into these.

As to the origin of the hemorrhage the amnion and charion being without blood vessels, we must look to the decidual vessels for its source.

Discussion.

Dr. Jacob Frank, of Chicago: Mr. President, I wish to congratulate Dr. Hopkins on his

successful case of Caesarean section. There is one point I would like to bring out in connection with his paper, and perhaps it would be well for me to demonstrate it on the blackboard, why his patient did not become sterile after the operation. There are cases on record similar to the one Dr. Hopkins spoke about, in which, after tying off the tube alone, the women became pregnant again. In the first operation to produce sterility the operators merely tied off the tubes, and then cases appeared in the literature that the women became pregnant again. Someone then suggested that the tube be tied off in two places and the tube cut through. Still cases appeared in literature after that operation of women having become pregnant. Again, it was suggested by someone to crush the tube and tie it. Even after this procedure cases appeared in the literature of the women becoming pregnant. There is only one way to produce sterility in a woman, and the operation I will describe, which is not my own, has not been followed by pregnancy, so far as I know. It can be performed in two ways; that is, by cutting out a wedge-shaped piece of the uterus, taking the entire tube away, and then bringing the edges together with catgut or silk ligature. Or the operation can be done in this way (demonstrating on blackboard): Let us suppose that this diagram represents a side to side view. Here we have the accompanying tube. A wedge-shaped piece is taken out of the uterus, and the entire tube removed, leaving a trough, and when the edges are brought together you will readily see that continuity is re-established.

Why is it, after crushing the tube and tying it off, or cutting between two ligatures, there are cases on record of women having become pregnant again? It is for this reason: If you tie off the tube, it cuts it through, and leaves the tube patulous, so that nature tries to reproduce itself. But by taking out a wedge-shaped piece of the uterus and leaving a trough, leaving the tissues in continuity, the uterine tissues are reestablished again by bringing the peritoneal surface together and over the opening where the tube should have been. Since adopting this method I have had no case where pregnancy has taken place, and if Dr. Hopkins should have another case, I would suggest that he try this method.

Dr. Hopkins (closing the discussion): At the time of doing the operation, I thought that crushing and ligating the tubes at the point of crushing would be sufficient to render the woman sterile. But I understand why it is necessary to resort to the method which Dr. Frank has described, if we hope to render a woman everlastingly sterile. It would be in connection with the moles I have described; but considering the fact that this woman had had two abortions before a Caesarean section was done, neither one of which was a mole, and the fact that she had two abortions after the Caesarean section, both of which were moles, it would be interesting to know whether the Caesarean section so disturbed the circulation as to be responsible for this abnormal ovum.

SOME PHASES OF DISORDERED METABOLISM IN NEPHRITIS.

BY RALPH W. WEBSTER, M. D., PH. D.,
CHICAGO.

In selecting the title of this paper, I do so advisedly, inasmuch as we all agree, I believe, that true nephritis is, invariably, preceeded by marked disturbances of the normal metabolic processes of the body. It is, indeed, a very difficult, and even impossible, task to draw the line between truly physiological or slightly pathological conditions and those which are, clinically, characteristic of nephritis. We all are familiar with the so-called physiologic, cyclic, adolescent, orthostatic, and other varieties of albuminuria, which are rarely, if ever, accompanied by the other urinary findings which we have learned as characteristic of nephritis. However, when we consider febrile albuminuria, then do we find, occasionally, all the urinary abnormalities which are so commonly classed as nephritic findings. According to Gerhardt, febrile albuminuria has come to mean the albuminuria accompanying fever, without the presence in the urine of abnormal constituents other than an occasional cylinder. This idea must however, be abandoned in view of the work of v. Leyden, v. Leube, Senator, Naunyn, Cohnheim, Hallauer, Lüthje and others. These workers have found, as constituents of the urine during febrile attacks, all of the elements shown in true renal inflammations. The relation of the albuminuria to the fever has probably no direct dependence on the temperature, as various workers have shown that increased temperature, per se, does not cause a true albuminuria, but rather an albumosuria. These facts in themselves show us, beyond a doubt, that what we clinically classify as nephritis is primarily a constitutional or metabolic process with secondary manifestations in the kidney. The clinical picture of pain in the back, voiding of a urine scant or abundant, containing albumen, casts, blood, epithelial cells, etc., oedema, and other well known signs are symptomatic of what we term "renal in-

sufficiency," a term having no more scientific basis than the term "heart failure" as applied to organic lesions of the heart.

We must not forget, in our effort to show the influence of metabolic disorders on the kidney, that this organ is not only excretory but is secretory as well. The internal secretion of the kidney has, in its way, perhaps as marked an influence on the nitrogenous metabolism as has that of the pancreas on the carbohydrate metabolism. It is a well known surgical fact that the removal of a part of the kidney, in persons shown post-mortem to have been possessed of but the one kidney operated upon, is accompanied by death, although polyuria along with increased urea secretion is observed. The cause of death in these cases seems to be due to a disturbance of metabolism resulting in the increased nitrogenous decomposition evidenced by the increased urea, sulphate, and phosphate excretion. If then according to our contention nephritis is primarily constitutional and later local, as a result on the part of the kidney to eliminate the retrograde products produced by an abnormal metabolism, then are we justified in an attempt to show that certain irregular metabolism may excite pathological changes in the excretory organ and thus give rise to the different varieties of what we choose to call nephritis whether it be acute, subacute or chronic, and whether it be diffuse, parenchymatous, or interstitial.

When one considers the etiology of nephritis he finds in every case that the causative factor is one which has produced marked metabolic or functional disorders resulting in the production of toxines, irritant poisons, changes in the properties of the blood, and various other pathological abnormalities which in themselves cause irritative and later inflammatory lesions in the kidney, resulting in nephritis. Thus, if we accept Senator's classification of causes, we find, (1) infectious diseases, (2) toxic agents, (3) exposure, (4) pregnancy, (5) trauma (?), (6) extensive skin lesions (Osler). All of these etiological factors change in many ways the normal metabolism and place new burdens upon the secretory organs, especially the kidney. Any of these causes may or may not bring on an attack of nephritis depending on the strength of the irritation, the time of its action, and the resistance of the kidney to the irritation. As is well known, not all of the infectious fevers show nephritis as a common complication but they may providing the toxin, produced by the metabolic activity of the germ producing the disease in question, is of sufficient virulence. It may be well to call to mind in this connection that not always do we find in scarlet fever, for instance, symptoms of nephritis although the kidney may show marked degenerative changes post mortem, nor do we always find marked changes in the kidney when the clinical manifestations of nephritis are present. In this connection I may cite the recent results of Cabot.

It is not within the scope of this paper for me to discuss the various metabolic changes brought about in the organism by fevers, exposure, pregnancy, irritant poisons or any of the other etiological factors of nephritis, as I wish more particularly to treat of certain changes brought about in the metabolism which can be directly traceable to the nephritis, which in itself has been the result of the abnormal metabolism caused by the factors previously mentioned. Time will not allow a discussion of the various anomalies of urinary secretion observed in nephritis nor a digression on the subjects of the causation of the albuminuria and its connection with the older ideas of Semmola and later of Lepine and Rosenbach. I wish to limit myself in this paper to the three points of chloride retention, oedema, and uraemia, all of which can be shown to be, to a more or less extent, dependent on the lesions in the kidney, although certain phases of their pathological chemistry can be observed in normal individuals.

1. *Regarding the Retention of Chlorides in Nephritis.*—Since the publication of Widal and Javal in 1903, a large number of French and a few German workers have busied themselves with showing that, chloride of sodium is, contrary to our well-established ideas, a decidedly harmful substance

in cases of nephritis. Although Widal and Javal, Achard, Loeper, Claude, Bohne, Castaigne and others did not originally apply their ideas to anything but the parenchymatous variety of nephritis, later workers such as Achard and Paisseau, Brandenstein, Calabrese, Chauffard, Olmer and Audibert, Merklen, Lesné, Vaquez and Laubry, Strauss, with a host of others, have extended this original idea to interstitial nephritis, cardiac and hepatic dropsy, epilepsy, etc. These workers have found that the chloride is retained in the system, that along with this the oedema is increased and a greater albuminuria is noticed. Some recent work of Miller has shown that there is quite as much retention in normal individuals as in nephritics. That oedema is not observed in the normal goes without saying. Ferrannini has shown that although chlorides are retained in nephritis and albuminuria is increased, the general betterment of the condition warrants the use of this substance as subcutaneous injections.

Rumpf in a recent article shows that the idea of retention of sodium chloride as an etiological factor in the causation of the oedema of nephritis is not well grounded. Richter confirms this and believes that NaCl is no more responsible for the oedema than are many other factors, especially the amount of water intake. Marischler shows that the kidney of parenchymatous nephritis is permeable for the sodium chloride and that the retention of NaCl is explained by the primary retention of water. Kövesi and Roth-Schulz confirm this idea and go further into the physical explanation of the oedema. We see, therefore, that this assumption of the causal relation of retention of chlorides to the oedema is still a debatable one. It may be well, at this moment, to ask how does NaCl act in the normal and how in the nephritic metabolism? When NaCl is administered, by mouth, it of course is absorbed from the stomach and bowel. The blood becomes more concentrated, hence water passes from the tissues into the blood, making this hydraemic. The excess of water and of salt is, normally, excreted by the kidney as this organ is the osmo-regulator of the body. NaCl therefore acts normally just as any other salt, such as the citrate or acetate would act, as a diuretic, owing, simply, to its so-called "salt-action." The question might be asked in this connection as to why normal individuals show a retention of chloride. The answer must be rather vague in the present state of our knowledge. "The amount of NaCl in the blood is," according to Hammarsten, 6 P. M., and this amount remains almost constant. With food containing an excess of NaCl, this excess is quickly eliminated and with food poor in chlorides the amount in the blood first decreases but later increases, after taking chlorides from the tissues. The secretion by the urine is thereby diminished and we have an *apparent* retention." This retention it must be insisted on is only apparent and vanishes as soon as the proper osmotic equilibrium has been established between tissues and blood. According to Marie we have two stages in the retention of chlorides and these stages depend, of course, on the laws of osmotic pressure and of chemical equilibrium. The first stage of retention, as Marie puts it, is that of fixed chloride (tissue), namely the combination of the NaCl with the proteids of tissues, which assumption has been experimentally shown to be possible by van Bemmelen, but is doubted by Bugarsky and Liebermann. The second stage is that of circulating (interstitial) chloride. This added point shows us how in the first stage we get a retention if the NaCl of the blood is insufficient owing to a poor intake and is then increased by food rich in NaCl.

If now the kidney is "insufficient," or, in other words, is unable owing to the inflammatory processes affecting its excretory activity, to excrete the excess fluid and its constituents, we have a retention of salt in the circulatory system, a hydraemia and at the same time a plethora, vascular pressure is increased, transudation through the capillaries follows, an attempt is made to adjust the osmotic pressure of the blood and the tissue fluids, salts pass into the tissues, which, in time, become hypertonic, and in consequence, water follows the salts

into the tissues and oedema occurs as a combined result of increased vascular pressure with transudation and the retention of salts in the tissues. This theory of oedema as a result of osmotic exchange between the blood and tissues was advanced by Loeb in 1898 and has been reached by the French school, especially by Widal and Javal, working from different standpoints.

It is difficult to say just why nephritics show increased albuminuria after increased intake of sodium chloride, yet, one may call to mind the results of Hoppe-Seyler, von Wittich and Nasse, showing that an albuminous solution filters stronger, the greater its content of salt. This purely chemical fact may also be applicable as far as the purely physical theory of filtration through the kidney is concerned. On the other hand one may assume that the kidney has become more permeable for albumen or that the albumen itself has become more diffusible inasmuch as various workers have shown that normal individuals, in time, show an albuminuria under the influence of increased intake of NaCl.

There are difficulties in the way of both explanations. In the first place, if the kidney has become permeable for albumen, then would it not be permeable, at the same time, for the increased chlorides? If the albumin is more diffusible, it is not as diffusible as the NaCl and yet the latter remains and the former passes out. We must again revert to the osmotic theory for our explanation. Proteids possess only a slight osmotic value while the salts have very large equivalents. The osmotic and the diffusion currents extract the fluid and the salts first from the tissues and then later from the blood back into the tissues. The proteids are not affected by this interchange unless we may assume, with Semmola, that some change in the constitution of the proteids by which they become more diffusible is brought about in nephritis. In this connection I wish to mention some experiments, which I began under Senator. It was found that the urine of nephritics showed the separation of a coagulatory inhibitory substance and at the same time of a distinct ferment with marked peptic characteristics. This latter was in all probability simply an increased amount of the normal peptic ferment found in the urine by Grober, Gehrig, Grützner, Mathes, Rosenberg, Stadelmann and others. This separation of a substance in the urine which favored or inhibited coagulation of proteid has been previously worked out by Lenobel, Kun and Lochbihler on pneumonia. It is possible that the albumen becomes more diffusible solely through the presence of these two substances whose identity I am at present unable to give. It is, however, a very strange fact that NaCl will increase or cause an albuminuria. The explanation best suited is, it seems to me, that we have a pure toxic albuminuria. This toxic action of NaCl is well known physiologically from the work of Loeb, Moore, Neilson and others.

2. *Oedema as a Result of Nephritis.*—I will refer in this connection only to the oedema caused by the lesions of the kidney resulting in certain pathological changes of the metabolism of the fluids and solids of the blood and tissues. I exclude a discussion of cardiac and hepatic oedema as well as of "Hydrops Cachecticus" which has no direct place here, although I am convinced of the correctness of the reasoning of Kövesi and Roth-Schulz, that the cause of cardiac and renal oedema is a common one.

We must abandon the old conception of Bright that the oedema was caused by hydremia of the blood resulting from the loss of albumen and hence the watery constituents of the blood more easily passed out of the vessels, just as we must give up Bartels' and Stewart's ideas of a hydraemic plethora, because we can show that retention of urine, per se, will not bring about an oedema.

Cohnheim assumes an inflammatory change in the vessels by which they become abnormally permeable. Senator remarks, "under the influence of certain injurious properties of the poison circulating in the blood, the capillaries of the glomerulus first suffer and then, if the injurious action be strong enough and long enough continued, the interstitial and other vascular areas, out-

side of the kidney, such as those of the skin and serous cavities, become affected. A glomerular affection is always to be looked for when oedema is present, but not vice versa." Kövesi and Roth-Schulz would make the insufficiency of the kidney in itself responsible for the changes resulting in oedema. The changes in the kidney excite abnormal metabolic processes by increasing the watery and solid constituents of the blood and preventing the elimination of the poisonous toxic and autolytic products. As a result of increased vascular pressure combined with abnormal permeability of the capillary walls and increased osmotic changes oedema follows. It is well to remember in this connection the role played by the perspiration both sensible and insensible. As Bidder and Schmidt, Seegen and others have shown, the amount of perspiration depends on the temperature and the degree of saturation of the surrounding air. However it is a well known fact that nephritics perspire very slightly. v. Koranyi comes forward here with an explanation of increased osmotic pressure of the blood, raising the point of evaporation of fluid and hence decreasing the perspiration. It is possible thus to explain a part of the effect of NaCl in increasing the oedema by lessening the loss of water by the skin and lungs. The amount of fluid taken in is also a large factor in the causation of the oedema. As the fluid is absorbed just as it is normally, the hydraemic condition is increased and with the resulting insufficiency of the kidney, water elimination being the first abnormal phase noticed when the kidney becomes affected, aggravation of an oedematous condition follows. We have here a distinct reason for limiting the intake rather than increasing it, as we cannot flush the kidney in this way owing to its lessened excretory activity. The result is an overburdening of an already highly taxed heart and an increase of the oedema.

3. *Uraemia as a Result of Nephritis.*—In the discussion up to this point I have not attempted in any way to take up the effects of nephritis on the system in general, but have rather limited myself to the point at issue. Under the head of uraemia one must bring in certain points of general pathology and pathological chemistry in an attempt to show that this is a result of purely metabolic processes. The symptomatology of uraemia is too well known to you to need mention. The causation of these symptoms is my topic. As oedema is a combined result of renal and vascular causes on the metabolism, so is uraemia the result of renal and resulting metabolic changes on the cerebral centers and on the digestive system. The subject of autointoxication is one which is of general interest whether it be enteric, hepatic or renal.

The theories advanced as to the causation of uraemia have for the most part as a basis the idea of overloading of the blood with urinary constituents as a result of an insufficient kidney." Opposed to these theories are those that hold that Hydrämic with resulting oedema of the brain is at the bottom of the symptomatology. These latter ideas are especially advocated by Rees and Traube, but do not seem to be convincing, inasmuch as certain factors, assumed by the advocates, are at times missing and hence cannot be regarded as causative of all cases. I refer here, of course, to the hypertrophy of the heart and to the brain oedema. We must, however, grant that the oedema may be responsible for certain nuclear symptoms observed in uraemic attacks.

Time will not permit an enumeration of all the factors advanced in support of the chemical theory as opposed to the physical. We all know that the retention of almost every constituent of the urine has, at one time or another, been hailed as the causative factor in uraemia. One by one these substances have been abandoned until now we can not grant that any one substance is specific in the causation of this group of symptoms. From the time that retention of urea as an etiological unit was advocated by Wilson until the list had been exhausted by Bouchard in his assumption of organic urotoxins, we have been obliged to change our ideas of the factors responsible for the trouble under discussion. Opposed to these views are those of Frerichs, Demjankow, and the closely re-

lted one of Treitz, which assume an "ammoniamie" as the causative agent.

Strauss found that ammonia was increased in the blood but at the same time other nitrogenous bodies (neither albumin or urea) are present, which must play a role in the etiology of uraemia. He shows that while the salt content of the serum in uraemia shows no change, the amount of the nitrogenous constituents contained in the hydraemic serum, i. e., the Retention-N, is, as a rule, increased to a great extent. In connection with this work of Strauss, one must mention the findings of Gumlich and Richter that ammonia, alloxur bodies, and extractives, were markedly increased in the urine of uraemics. It is unnecessary for me to discuss the relation of an increased ammonia excretion to an increased acid formation in the tissues. This regulation of the metabolism is a well established fact. This taken with the idea of Strauss gives us a very rational basis for the etiology of uraemia. I quote from Senator. "One may characterize uraemia as an autointoxication with nitrogenous substances, dependent on destruction of the function of the kidney, which is accompanied by proteid decomposition leading to abnormal acid formation."

This idea, general as it is, has a scientific and experimental basis and does not assume a specific unit as the causative factor. In the retention-N of the blood we find, beside urea, uric acid, ammonia, and proteids, other bodies among which we may discover the specific, if such there be. That acidoses bring about conditions closely simulating uraemia is evident from the effects noticed in diabetes, pneumonia, and in the after-effects of certain anaesthesias.

Thus we are justified in our assumption that uraemia is purely a group of symptoms brought about through disordered metabolism as a result of lesions in an insufficient kidney, which have been caused, in their turn, by attempts, on the part of the kidney, to eliminate products of an abnormal metabolism, the result of a specific or non-specific toxaemia.

References.

Achard.—Retention des chlorures et pathogenie de l'oedeme. Soc. med des Hop. 31 juillet, 1903. Recherche de la retention des chlorures. Ibid. 19 octobre, 1903. Hyperchloruration et dechloruration. Ibid. 20 novembre, 1903.

Achard et Loeper.—La retention des chlorures dans les tissus au cours de certains etats morbides. Soc. de Biol. 23 mars, 1901. Retention des chlorures dans les nephrites. Soc. med. des Hop. 9 mai, 1902.

Achard et Paisseau.—Chloruration et dechloruration dans l'ascite d'origine cirrhotique et cardiaque. Ibid. 6 novembre, 1903. Oedeme experimentale. Soc. de Biol. 7 mai, 1904.

Bartels.—Handbuch der Krankheiten des Harnapparats. v-Ziemssen's Handbuch der Spezielle Pahtologie und Therapie. Bd. 9, 1875.

van Bemmelen.—Das System ($SbCl^3$ HCl-H^2O). Zeitsch. f. Anorg. Chem. Bd. 33, 1903, s. 272.

Bidder und Schmidt.—Die Verdauungssafte und der Stoffwechsel. 1852.

Bohne.—Uber die Bedeutung der Retention von Chloridin im Organismus fur die Entstehung uramischer und comatoser Zustande. Fortsch. d. Med. Bd. 15, 1897, s. 121.

Bouchard.—Lecons sur les auto-intoxications. Paris, 1887.

Brandenstein.—Zur Frage der Schadigung von Nierenkranken durch Kochsalz. Festsch. f. Senator. Berlin, 1904.

Bright, R.—Reports of Medical Cases. London, 1827 and 1831. Cases and Observations Illustrative of Renal Disease. Guy's Hosp. Rep., Vol. 1, 1836; Vol. 5, 1840.

Bugarsky und Liebermann.—Uber das Bindungsvermogen eiweisshaltiger Korper fur Salzsaure, Natriumhydrat und Kochsalz. Archiv. f. d. ges. Physiol. Bd. 72, 1898, s. 51.

Cabot, R. C.—Clinical Examination of the Urine. Jour. of Am. Med. Ass., Vol. 44, 1905, pp. 837 and 943.

Calabrese.—Sull'influenza della dieta clorurata ed ipoclorurata sul ricambio nei sani e nei cirrotici e sua azione sull' ascite della cirrose epatica. Atti dell' Acad. med.-chir. di Napoli. Tm. 58, 1904.

Castaigne et Rathery.—Etude experimentale de l'action des solutions de chlorure de sodium sur l'epithelium renal. La Sem. Med. Tm. 23, 1903, p. 309. Action exercee, in vitro, par les solutions de chlorure de sodium, sur l'epithelium renal. Archiv de med. exp. et d'anat. path. Tm.15, 1903, p. 669. Action nocive exercee, in vitro, sur l'epithelium renal par les serums normaux et pathologiques. Ibid., p. 678.

Chauffard.—Ictere chronique avec chlorurie minime et intermittente. La Sem. Med. Tm. 21, 1901, p. 164. Dechloruration et chloruration dans un cas d'ascite cirrhotique. Soc. med. des Hop. 13 novembre, 1903.

Claude.—Sur l'action excito-secretoire des chlorure de sodium dans les nephrites. Ibid. 3 juin, 1904.

Cohnheim.—Allgemeine Pathologie. 2 Aufl.

Demjankow.—Zur Lehre von der Uramie. St. Petersb. Med. Wochensch. Bd. 6, 1881, s. 243.

Ferrannini.—Uber die Wirkungen subkutaner Kochsalzinfusionen bei Nephritis mit Ruksicht

auf die neuren Theorien uber den Wert des Kochsalzes bei den Krankheiten der Nieren. Centralbl. f. inn. Med. Bd. 26, 1905, s. 1.

Frerichs.—Die Bright'sche Krankheit und deren Behandlung. 1851.

Gehrig, F.—Uber Fermente im Harn. Archiv f. d. ges. Physiol. Bd. 38, 1885, ss. 35 and 85.

Gerhardt.—Uber die Eiweissstoffe des Harns. Deutsch. Archiv. f. klin. Med. Bd. 5, 1869, s. 212.

Grober, J. A.—Die Bindung des Pepsins an die Salzsaure untersucht am Harnpepsin. Archiv. f. exp. Path. und Phar. Bd. 51, 1904, s. 103. Uber die Beziehungen der Verdauungs-zu den Harnfermenten. Deutsch. Archiv. f. klin. Med. Bd. 79, 1904. s. 443.

Gumlich, G.—Uber die Ausscheidung des Stickstoffs im Harn. Zeitsch. f. physiol. Chem. Bd. 17, 1893, s. 10.

Hallauer.—Uber Eiweissausscheidung im Fieber. Verhandl. der physik-med. Ges. zu Wurzburg. Bd. 36, 1903, s. 121.

Hammarsten.—Lehrbuch der Physiologische Chemie. 1904.

Hoppe-Seyler, F.—Handbuch der physiologischen-chemischen Analyse. 1865. Virchow's Archiv. 1856, s. 245.

v-Koranyi.—Physiologische und klinische Untersuchungen uber den osmotischen Druck thierischer Flussigkeiten. Zeitsch. f. klin. Med. Bd. 33, 1897, s. 1; Bd. 34, 1898, s. 1.

Kovesi und Roth-Schulz.—Uber Storungen der wassersecernierenden Thatigkeit diffus erkrantken Nieren. Berl. klin. Wochensch. Bd. 37, 1900, s. 321. Die Wassersucht der Nierenkranken. Wien klin. Wochensch. Bd. 17, 1904, s. 1075. Pathologie und Therapie der Niereninsufficienz bei Nephritiden. Leipzig. 1904.

Kun.—Uber die Ausscheidungskurve gerinnungsalterirender Eiweiss-substanzen im Harn wahrend der Pneumonie. Centralbl. f. inn. Med. Bd. 23, 1902, s. 827.

Lenobel.—Uber die Ausscheidung pathologischer gerinnungshemmender und gerinnungsfordernder Eiweisskorper durch den Harn. Wien. klin. Rundschau. Bd. 11, 1897.

Lepine, R.—Sur l'albuminurie dyscrasique. Rev. de Med. Tm. 4, 1884, p. 906.

Lesne et Richet.—Des effets de l'hyperchloruration chez les animaux nephrectomises. Gaz. des Hop. Tm. 76, 1903, p. 1321.

v-Leube.—Die Lehre vom Harn. 1882. Diagnose der inneren Krankheiten. 1905. Leipzig. Vogel.

v-Leyden.—Uber die erste Stadium des Morbus Brightii. Zeitsch. f. klin. Med. Bd. 3, 1881, s. 169.

Lochbihler.—Zur Kenntniss gerinnungsalterirender Eiweisskorper im Harn bei Pneumonie. Centralbl. f. inn. Med. Bd. 23, 1902, s. 777.

Loeb, J.—Physiologische Untersuchungen uber Ionenwirkungen. II Mitt. Archiv. f. d. ges. Physiol. Bd. 71, 1898, s. 457. On ion-proteid Compounds and their Role in the Mechanics of Life Phenomena. The Poisonous Character of a Pure NaCl Solution. Amer. Jour. of Physiol. Vol. 3, 1900, p. 327.

Luthje.—Zur Frage der sogenannten febrilen Albuminurie nebst einigen Bemerkungen uber die Bedeutung der Cylinder. Therap. d. Gegenw. Bd. 5, 1903, s. 491.

Marie.—La retention des chlorures dans ses raports avec l'oedeme. Soc. de Biol. 14 novembre, 1903.

Marischler.—Uber den Einfluss des Chlornatriums auf die Ausscheidung der Kranken Niere. Archiv. f. Verdaungskr. Bd. 7, 1901, s. 332.

Mathes.—Uber die Herkunft der Ferment im Urin. Archiv. f. exp. Path. und Phar. Bd. 50, 1903, s. 107. Uber die Herkunft der autolytischen Fermente. ibid. Bd. 51, 1904, s. 442.

Mathews, A. P.—The Toxic and Antitoxic Action of Salts. Amer. Jour. of Physiol., Vol. 12, 1904, p. 419.

Merklen.—Pathogenie de l'oedeme cardiaque. Soc. med des Hop. 19 juin, 1903. L'hyperchlorurie et l'hyperchlorurie chez les cardiaques. ibid., 20 novembre, 1903.

Miller, J. L.—The Elimination of Chlorides in Nephritis. Chicago Med. Soc., Feb., 1905.

Moore, A.—Further Evidence of the Poisonous Effects of a Pure NaCl Solution. Amer. Jour. of Physiol., Vol. 4, 1900, p. 386.

Nasse, O.—Der Chemismus der Muskelsubstanz. Biolog. Centralbl. Bd. 3, 1883, s. 243. Sitzungsber Marburger Naturewissensch, 1886.

Naunyn.—Fieber und Kaltwasserbehandlung. Archiv. f. exp. Path. und Phar. Bd. 18, 1884, s. 49.

Neilson.—Further Experiments on the Antitoxic Effects of Ions. Amer. Jour. of Physiol., Vol. 7, 1902, p. 405.

Olmer et Audibert.—De la retention des chlorures dans l'ascite d'origine hepatique. Rev. de Med. Tm. 24, 1904, p. 199.

Osler.—Practice of Medicine. New York. 1903.

Rees, O.—On the Nature and Treatment of Diseases of the Kidney. London, 1850.

Richter, P. F.—Uber die Vertheilung des Stickstoffs im Harn unter pathologischen Verhaltnissen. Charite-Ann. Bd. 22, 1897, s. 287. Experimentelles uber die Nierenwassersucht. Berl. klin. Wochensch. Bd. 42, 1905, s. 384.

Rosenbach.—Uber regulatorische Albuminurie nebst Bemerkungen uber amyloide Degeneration. Zeitsch. f. klin. Med. Bd. 8, 1884, s. 86.

Rosenberg.—Uber das diastatische Ferment im Urin und uber experimentelle Fermenturie. Dissert. Tubingen. 1890.

Rumpf.—Uber chemische Befunde bei Nephritis. Munch. med. Wochensch. Bd. 52, 1905, s. 393.

Seegen.—Zur Frage uber die Ausscheidung des Stickstoffs der im Korper zersetzen Albuminate. Ber. d. k. Akad. zu Wein. Bd. 63, 1871, s. 11.

Semmola.—Nouvelles recherches experimentales pour demontrer l'origine hematogene de l'albuminurie Brightique. Archiv de Physiol. Tm. 2, 1882, p. 59. Nouvelles recherches experimentales et cliniques sur la maladie de Bright. Archiv de Physiol. Tm. 4, 1884, pp. 1, 287, 427.

Senator.—Die Albuminurie. Berlin. II aufl. 1890. Hirschwald. Die Erkrankungen der Niere. Wien, 1902. Holder.

Stadelmann.—Uber den Pepsingehalt des normalen und pathologischen Harns. Zeitsch. f. Biol. Bd. 7 (N. F.), 1889, s. 212.

Stewart, G.—A Practical Treatise on Bright's Diseases of the Kidneys. Edinburgh, 1871.

Strauss, H.—Die chronischen Nierenentzundung in ihrer Einwirkung auf die Blutflussigkeit. Berlin, 1902, Hirschwald. Zur Behandlung und Verhutung der Nieren wassersucht. Therap. d. Gegenw. Bd. 5, 1903, s. 193. Zur Frage der Kochsalz und Flussigkeitszufuhr bei Herz- und Nierenkranken. ibid., s. 433. Weitere Beitrage zur Frage der Kochsalzentziehung bei Nephritikern. ibid., Bd. 6, 1904, s. 541.

Traube.—Gesammelte Beitrage zur Pathologie und Physiologie. Bd. 2, 1871, s. 551.

Treitz.—Uber Uramische Darmaffectionen. Prager Vierteljahrsch. Bd. 4, 1859, s. 143.

Vaquez et Laubry.—La regime hypochlorure chez les cardiaques. Soc. med. des Hop. 13 novembre, 1903.

Widal et Javal.—La cure de dechloruration Soc. med. des Hop. 26 juin, 1903. La chloruremie et la cure de dechloruration dans le mal de Bright. La Pressse med. Tm. 11, 1903, p. 701. Variations de la chloruration et de l'hydration de l'organisme sain. Soc. de Biol. 12 mars, 1904. La chloruremie gastrique. ibid. 19 mars, 1904. Influence de la cure de dechloruration sur l'albuminure brightique. ibid. 16 juillet, 1904.

Wilson, J. A.—On Fits and Sudden Death in Connexion with Diseasesof the Kidneys. London Med. Gaz., Vol. 11, 1883, p. 777.

v-Wittich.—Uber Harnsekretion und Albuminurie. Virchow's Archiv. Bd. 10, 1856, s. 325. Einfluss des Salzgehalts auf Filtration. Muller's Archiv., 1856, s. 286.

RESPIRATORY OXIDATION STIMULANTS IN NEPHRITIS, PULMONARY, SYCPNOEIC AND ALLIED CRISES.*

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The influence of oxidation on metabolic processes is now a central feature not only of physiologic working hypotheses, but of pathologic as well. It has been demonstrated beyond a doubt that most of the conditions like diabetes, gout, etc., are the result of the products of suboxidation.

The ease with which the oxygen carried by the plasma penetrates the minute vascular network of all cellular elements not only furnishes a clew, as Sajous remarks, to the physiologic dentistry of the latter, but likewise shows that various structures, the functions of which were unknown, are blood channels, or rather plasma channels. Thus the axis-cylinders of all the nerves and the dendrites of neurons were found to contain a fluid identified as blood plasma in its reactions to staining fluids. Even the neuroglia fibrils asserted their identity as plasma capillaries; the neurolgia felt work of the substance of the brain and cord representing the intrinsic circulation of those organs. The muscular contractile structures, the various glandular organs, including the liver, pancreas, and spleen, the gastric and intestinal glandular elements, etc., were all found to be so disposed as to allow the free circulation of this oxidizing plasma, the red corpuscles passing on in the larger channels. Contraction of the heart walls is due, according to Sajous, to the adrenal secretion which penetrates the heart substance by way of the Thebesian foramina. The coronary arteries likewise supply the cardiac muscle fibers with oxidizing substance.

In the muscular elements myosinogen is the primary source of residual energy. When combined with the oxidizing substance of the plasma, this organic body liberates the mechanical energy required for a given contraction; the nerves merely inciting and governing muscular function. Fibrinogen of the blood is similar to myosinogen and combines in fixed quantities with the corresponding proportion of the plasma's oxygen.

The fluctuations of the body's temperature correspond to variation in quantity of fibrinogen supplied to the plasma. The source of functional energy in the nervous system is myelin, whose active constituent is lecithin, now used extensively in therapeutics. This myelin surrounds the axis-cylinders of all nerves and lines the inner surface of the dendrites of neurons and forms the ground substance of thin cell bodies.

The influence of oxygen on nerve conditions, whether related to direct disorder of the respiration or not, was long ago pointed out by Meynert, who showed that contraction

of the arteries by impeding respiration necessarily engenders a dyspnetic phase of nutrition, and modifies the chemical changes associated with irritation resulting from a certain degree of dyspnetic intoxication. Dyspnea of tissue alone suffices to excite repulsive movements. Inspiration is the most ordinary form of repulsive movement evoked by a dyspnetic stimulus which in extreme cases may, by irradiation, involve a number of muscles. This stimulus results not only from defective breathing, but likewise from increased arterial pressure or from arterial contraction.

Impoverishment of the brain substance in oxygen has the effect of a chemical irritant which excites dyspnetic respiration in the medulla and produces epileptic changes in the convulsion center. Increased arterial pressure in the cortex produces an improvement in oxygen. As soon as the condition of painful sensation exists, a dyspnetic phase of nutrition is established. The association of acidosis and glycosuria, as shown by Coriat to exist with melancholia, the stuporous insanities and the depressed phases of other psychoses, indicates the sub-oxidation which occurs in conditions of painful sensation, and, as pointed out by Meynert, underlies the general failure of nutrition in these states.

The nature of the substances carrying oxygen in the system, as indicated by Sajous, shows that the kind of oxygen needed for therapeutic purposes must be one which has passed through biochemic changes and exists in a form that would pass into the circulation ready to become myosinogen or fibrinogen. There are two therapeutic agents which have been found to possess this quality. Both of them have been used therapeutically in the relief of disorders of respiration, and in cyanosis. About twenty-six years ago Penzoldt observed that the addition of quebracho to cyanosed blood produced a change in the arterial direction of a most decided character. Shoemaker asserts that the drug is of decided value in dyspnea of all kinds, whether bronchial, cardiac or nervous. In emphysema, with or without asthma, and in spasmodic croup it is of decided value. It improves the respiration when taken before hill-climbing. Its effect in relieving cyanosis is decidedly marked. It diminishes the pulse and temperature in acute rheumatism, and in inflammations of serous membranes. A notable phenomenon observed in poisoning from the drug is that although death may take place from asphyxia, the venous blood is red or reddish. For this reason Penzoldt believed that the relief of dyspnea obtained clinically from quebracho was due to its increasing the power of the blood to take oxygen and the dyspnea caused by poisonous doses was probably due to its preventing the blood yielding the oxygen to the tissues. From what is known of the effects of over-stimulation with oxygen, this explanation seems probable.

In the depressed psychoses, the cerebral disease exerts an inhibitory action on cardiomotor innervation, causing the pulse to be very small, the arterial tone low, and the capillary circulation very weak, and, in many cases, decided thoracic symptoms with mental distress, resembling attacks of suffocation accompanied by precordial fright, as it has been termed.

Kiernan states that quebracho is indicated in melancholia and conditions of depression, and probably for the reason just outlined. He reports a case which seemed at the onset to be one of melancholia with the facies, capillary circulation, and emotional depression well marked. The patient had phthisis and had been deserted by her husband. She ran down rapidly, and at one time seemed almost moribund from dyspnea. To relieve this, quebracho in half-dram doses of the fluid extract was given every hour, with very beneficial effects, not only on the dyspnea, but likewise on the mental condition. She improved rapidly; the facies and depression of melancholia disappeared, but with this came new delusions. It was found on careful investigation that the patient had had systematized delusions of grandeur for years before being suspected of any mental disease. The melancholia was, therefore, a complication of preexisting paranoia, which had not been detected. Kiernan, guided by this case, has used quebracho and found it of value in melancholia, in conditions of depression, and in the pseudo-apnea which accompanies the

pseudo-anginas of auto-toxic neurasthenia and allied states.

The eclectics and veterinarians have long employed rosin weed (silphium) in similar conditions to those in which quebracho is indicated. Indeed, rosin weed is an excellent synergist to quebracho. The fact that the depressed states have the marked suboxidation results, as pointed out by Coriat, indicates the use of these two oxidizing agencies in glycosuria and acidosis.

The *modus operandi* of jambul in glycosuria and acidosis is allied to that of the two drugs mentioned, and the three form valuable synergists. The alkaloid of quebracho, aspido-spermine, possesses all the medicinal properties of the drug, is reliable, uniform in strength, and can be used hypodermically. It has decided effects on the temperature of acute articular rheumatism, and does not produce cardiac depression. The specific tincture of rosin weed made from the green drug is a very reliable preparation, perhaps the most reliable.

Dyspnetic crises occur in conditions where there is disturbance of the monarchical vasomotor center of the medulla. They are hence to be found in connection with acidosis, whether related to diabetes, to the psychoses, to paretic dementia, to locomotor ataxia, to traumatism, or to epilepsy, neurasthenia or hysteria. In hysteria, conditions often occur where there is a suppression of the normal degree of acidity accompanied by dyspnea, which is but too apt to be regarded as simulated. What is true of acidosis is likewise true of the uremic states, whether secondary to the neuroses and psychoses just mentioned, or the arterio-capillary fibrosis of Gall and Sutton, which is now recognized as the constitutional basis of most forms of chronic Bright's disease, or to the acute inflammatory forms of nephritis, which produce secondary constitutional symptoms, albeit the primary lesion is in the kidney.

In all of these dyspnetic states the one great indication is to stimulate and sustain respiratory action. This can be done only by agents which will remove the hematic source of the condition, and at the same time will sustain the heart and lungs without unduly removing them from the inhibitory action of the medulla. In the dyspneic coma of the acidosic states good results have been attained by large doses of sodium bicarbonate, assisted with codeine, morphine, heroin and apocodeine. Every one of these preparations of opium, save apocodeine, locks up the secretions, thereby impairing the benefit given through heart stimulation. Agents are therefore needed that are destitute of such action on the secretions. In the conditions referred to an error in diagnosis easily results, since while there is marked action of the bowels and kidneys, the eliminative element is deficient. This is singularly well shown in the fact that the first beneficial effect of sodium bicarbonate appears in the reduction of the quantity of urine passed. A patient passing three gallons of urine a day, will have the amount reduced to one gallon and a quarter by sodium bicarbonate given in a half gallon of milk. Here the amount of water which is taken from the tissues is diminshed by the influence of the sodium bicarbonate because of its neutralizing power on the B-oxybutric acid formed by the muscles, as well as on the production of diacetic acid and acetone. The enormous strain to which the passage of such quantities of acid through the blood vessels subjects the heart calls for marked sustenance of it by agents which do not interfere with the excretion of the acids or which change them by oxidation. While oxygen has been administered for these purposes with some success, still oxygen which has undergone no biochemic change is not easily assimilated, and requires much time for assimilation.

Since quebracho, rosin weed and jambul have the common property of rendering venous blood reddish, as already pointed out, it is evident that these drugs can take the place of oxygen and of the opium alkaloids, with much better results as to heart stimulation and as to elimination. What is true of the acidosic comas is equally true of the comas arising from uremia, etc. In every one of these conditions aspidospermine has proved itself of great value, whether given by the mouth or hypodermically. The one great

value of this class of drugs in these states is the fact that in addition to their powers on the monarchical vaso-motor center in the medulla, they have the power through their influence on blood quality of overcoming arterial tension to a great extent. This is of special importance when it is remembered with what frequency hemiplegia and aphasia follow uremic and acidosic comas.

These drugs during the eighties were used considerably, and with marked success, in the conditions described, but fell into desuetude along with many other useful remedies, because of the wave of therapeutic nihilism occasioned largely by distortions of the microbic hypothesis, which led to neglect of all but antiseptic therapeusis, and that adopted by the "man behind the knife." With the growth of the chemical phase of the germ theory, oxidation has once more come into play as an important phase of biochemistry, and the agents producing this, such as I have indicated in the present paper, are deserving of further study.

It is pleasing to note that rational therapeutics and dependable remedies are receiving a little more thoughtful consideration than they have for some years past, and it is the purpose of this paper, and will be the purpose of many papers I hope to write hereafter, to stimulate a more earnest study of internal medicine and, especially, of therapeutics.

Discussion on Papers of Drs. R. W. Webster and G. F. Butler.

Dr. Samuel A. Oren, Lewistown: Both papers are very interesting and cover the ground completely. I wish to go on record as believing that the time is not far distant when diabetes will not be called a disease, but will be recognized as a symptom of one of many diseases.

I wish to report one case of nephritis which had a very marked albuminuria. The patient was a young man; there was general edema, the skin was as tight as it could be. The heart action was very labored; in fact, the patient had been given up to die.

In examining the urine, a drop of nitric acid would make it as white as milk, but I could not find any casts. I put him on digitalis and nux vomica, but without obtaining the desired resired result in the way of improved heart action and free diuresis. On close examination, I thought I could detect dullness in the lower portion of the pleura. I introduced an aspirating needle and withdrew about two ounces of what I supposed was serum. The urine immediately began to clear up, and in two weeks, without any further particular medicinal treatment, the anasarca had disappeared entirely. The urine was clear and the case was practically cured.

I kept track of that patient for about eighteen months. It was always a puzzle to me just what the exact condition had been pathologically, but my final conclusion was that this young man had had pleurisy with effusion, and that the kidneys were carrying off that serum albumin.

Dr. Wm. F. Waugh, Chicago: I have listened with a great deal of interest to these papers upon nephritis, and I want simply to supplement them by directing the attention of the meeting to a remedy which, I believe, has not been mentioned. I refer to veratrine. In the cirrhotic form of nephritis, when there is necessity of relaxing abnormal vascular tension, veratrine will accomplish this better than the nitrites, because with the latter you cannot maintain a sustained action for long periods, valuable as they are for immediate, rapid and temporary effects. With veratrine you can sustain such action for periods of eighteen months or more without injury to the patient.

As to potash in contracted kidney. We look with apprehension for the development of uremia, manifested by convulsions, due to the retention in the system of toxins of a convulsant character. Since Bouchard's time we look on potash as a toxin of a convulsant character, so that I am quite unable to say why, in such a condition, the potash salts should be administered, unless on homeopathic principles, and then they should be administered only in homeopathic doses. In veratrine we have an agent that throws open all the doors of elimination, and it has more clinical testimony in its favor than all the other remedies that have been used.

In a little booklet which I picked up over at the Exhibit, I notice the dose of veratrine is given at 1-50 to 1-10 of a grain. I venture to say that nobody who ever used chemically pure veratrine ever used it in 1-10 grain doses. It is irritant in much smaller doses. A dose of 1-2 milligram is quite as large as should be administered by the stomach to any patient at the beginning. This dose, if diluted or given in a stomach that contains food, can be quite readily borne; and repeated, as its action is quickly manifested, every half hour, if necessary, until the vascular tension has been relaxed to the desirable degree. Then such doses are given as will keep the tension where desired; and I venture to say that there is no more efficient or safer remedy that can be used in this condition.

This seems of particular importance since in this condition of disabled kidney there is danger even in giving remedies which ordinarily are not dangerous. During the Centennial Exposition, a man died in Philadelphia from 1-8 grain of morphine. He had contracted kidney.

Veratrine is here the only remedy which is promptly efficient, and safe, and which actually obviates that danger which lies in the administration of even ordinarily harmless remedies.

INFECTIOUS URETHRITIS OF THE NON-GORRHEAL TYPE.*

BY F. KREISSL, M. D., CHICAGO, ILL.

The paper which I have the honor to read before this body presents an interesting problem rather than anything which would permit of any definite conclusions regarding etiology, pathology or treatment of a variety of urethritis puzzling many practitioners. Dealing with a large number of cases of urethral secretions, you will occasionally meet a few which upon close inquiry and investigation show a marked difference from the ordinary case of gonorrheal urethritis, concerning initial symptoms or further course, and reaction to the various recognized measures successfully employed in gonorrhea.

There is either no history of a previous gonorrheal infection or the discharge in question is a continuation of a typical gonorrheal urethritis,or it appears weeks or even months after a typical gonorrhea was apparently cured. In the last group quite frequently a new infection is practically out of question because the thoroughly trustworthy patient either denies having had sexual intercourse, or admits it, but has always used a condom. The symptoms accompanying this condition differ materially from those observed in gonorrhea. In primary infections of this kind preceded by an incubation of from a few hours to several weeks, a scant grayish-whitish secretion, and slight tickling or itching in the urethra near the orifice are observed. The same quality of secretion is noticeable in the cases of the second and third groups mentioned above. Sometimes with or without any direct cause, the secretion becomes more copious for a few days, then again decreases, and eventually disappears completely, only to appear again with or without a traceable provocation. The urine always contains more or less shreds. In the vast majority of these cases, I should say from my own experience in over 90 per cent the process remains wholly confined to the tissues of the anterior urethra, and complications or sequelae of any kind, as one expects and sees in gonorrhea, are of an extremely rare occurrence. The urethroscopic inspection of the cases of the first group—primary infection—furnishes little positive material. In the very early stage some hyperemia or slight edema of the urethral mucosa is visible, rarely any inflammatory signs in and around the glandular apparatus.

In the cases of the second and the third groups you may find lesions commonly observed during and after a prolonged gonorrheal urethritis, but almost as often you do not, especially not in those cases in which the gonorrhea has been checked before it had a chance to establish the lesions peculiar to its chronic stage.

The most interesting and the most important feature of the condition is offered in the microscopical study of the discharge itself. Stained with an alkaline methylen blue solution, you see in the more recent case, or at times of exacerbation, numerous leucocytes; at other times very few leucocytes, but many flat epithelial cells. There are ever present, though varying in numbers, one or two or all of the following microorganisms:

Staphylococcus, pneumococcus, pseudodiphtheria bacillus, coli bacillus, gonococcus only in cases in which a preceding or simultaneously occurring gonorrheal infection has not been checked. Sometimes the staphylococcus predominates and there are but very few germs of the other variety at other times, even in the same case, one of the other germs occupies first place in numbers. And, again, there will be days and weeks, when nothing but leucocytes will be seen under the microscope, and only a careful culture test will demonstrate the presence of those microorganisms in the secretion.

For four years since, with the valuable aid of Dr. Evans and Dr. Gehrman, of the Columbus Laboratory, I commenced to approach this subject closer, I had two points in view, to trace the infection to its origin, and to find a way of successfully checking it. I regret to state that after all this laboratory and clinical work I am not positive regarding the first point, and I do not know much more about the treatment than I knew four years

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

ago. In the latter point I find consolation in the company of thousands of others. It would lead too far and take up too much of the time given for this paper to quote all the references on the bacteriology of the healthy and the diseased urethra, but I have to mention a few publications of recent years having some bearing on my subject. The author of the first publication on "Urethritis Non-Gonorrhoica," in 1901, was Barlow, who established the fact of the existence of such a condition, stating his belief in its infectious character, although no bacteria could be found in the secretions.

Goldberg reported a case of primary streptococcus infection in 1901, and was followed in 1902 by reports of Waelsh and Galewski, on non-gonorrheal urethritis, in which some kind of a bacillus, sometimes a streptococcus, staphylococcus albus was found in the secretion. In the same year Camille Audistere, in "Le Progres Medicale," was able to prove the infection in five cases of purulent endometritis to be caused by staphylococcus, and "various bacteria," traceable to the urethral secretion of the respective male partner.

Another publication by Dreyer of more than ordinary interest appeared in 1904. It accuses the enterococcus found by Thiercelin as responsible for these peculiar and apparently intractable urethral secretions. The enterococcus, according to Thiercelin, is omnipresent. It abounds in the feces, especially in intestinal disturbances; it was found in the stomach in gastric fever, in abscess of the liver, in the nose, mouth and pharynx during influenza, in the pus of a pulmonary abscess, and it exists on the skin and in the vagina. This coccus, according to the laboratory experiments of Dreyer, changes under certain conditions into a bacillus resembling the diphtheria bacillus, and after inoculation on bouillon or agar reverts into a coccus! ! In living tissues it assumes the shape of a pneumococcus. A remarkable series of transformations!

On the other hand, a number of authors have established the fact of the presence in the healthy urethra and vagina of all the microorganisms which are seen in these secretions, and the only conclusion permissible is that these saprophytes ordinarily harmless and occasionally present in small numbers become virulent on certain membranes, which by some provocation have lost their natural power of resistance, and thus have been rendered a favorable culture medium. As such provocation, we may regard anything causing hyperemia and congestion also traumatic lesions of the mucosa. And, indeed, upon inquiring, we will be able in many cases to trace the inoculation back to a sexual excess, violent exercise, other indiscretions, or urethral instrumentation, etc., immediately preceding the intercourse responsible for the disease. In others very likely the infection with gonorrhea and these germs occurred simultaneously, perhaps in others the uncured gonorrhea rendered the urethra susceptible for the subsequent infection.

Regarding the treatment, very little of value can be said. The few cases of coli infection which I have seen promptly and shortly yielded to the internal medication with larger doses of urotropin or other formaldehyde preparations. In a few staphylococcus infections mercurol, in one-half to two per cent solutions, proved very effective. So did two per cent ichthyol solutions, where the patient would tolerate the smarting sensation caused by the medicine.

In one case in which the urethroscope showed several islands of pseudo-membranes, and the cultures nothing but pseudo-diphtheria bacillus, I used antitoxin hypodermically on two succeeding days, and the discharge disappeared. I have seen the case since then repeatedly. It is over two years now, and everything is apparently normal. Perhaps a urethral injection with the antitoxin might have had the same effect. Encouraged by this result, I tried this treatment in other cases in which the bacillus was found in company with staphylococcus and pneumococcus but without success. In a few cases I used electrolysis in apparently diseased pockets and follicles with good results.

Several years ago, I think in 1901, Reichman, of Chicago, published a case of this kind in the Prager Mediz. Wochenschrift, stating that following my advice he effected a permanent cure by electrolysis.

Very few of them seem to improve by one or the other method of treatment, but get worse as soon as the latter be discontinued, and most of them even while under treatment. A few recover without any treatment, some of them completely, some to that extent that the discharge ceases, but shreds are constantly present in the urine. Most of them seem to be well for days, weeks, even months, when with or without a palpable cause the secretion reappears. Several times I saw the trouble permanently gone after a super- or reinfection with gonorrhea, which was complicated by epididymitis or prostatitis, and a high temperature for a few days. One of my patients who carried this infection for over two years lost it permanently after a severe typhoid fever. Light has a deleterious effect on the pneumococcus and bacillus diphtheriticus, and I have in mind to utilize urethral injections with radioactive fluids in the future.

In looking over the large number of cases of this type which I have closely studied, with the kind assistance given me by the exact work in the Columbus Laboratory, I should conclude that they are far more frequent than the few sporadic publications would make it appear. While the proportion of primary infections is a very small one, I know that in fully 15 per cent of the cases of gonorrheal urethritis, the other infection occurs simultaneously, and in others appears sooner or later at any rate within a few weeks after the gonorrhea was noticed. This condition is not recognized in the beginning of an acute gonorrheal urethritis, because one is generally satisfied to find pus cells and numerous gonococci, and forgets or is not aware of the fact that at this stage the gonococcus overshadows all other microorganisms, and that only a culture test may disclose the presence of the latter. After a few weeks or months, when the gonorrhea has been cured or has become subacute, the presence of the other germs which all take and retain the alkaline methylen blue stain is without difficulty recognized. And yet it is just all-important to know the real condition in the early stage of the gonorrheal trouble, because on this depends the prognosis of the case and the prestige of the physician. While I venture my often repeated statement that every physician who is somewhat familiar with the true principles of the treatment of acute gonorrheal urethritis, will always successfully employ the well known specifics therein, I am positive that nobody as yet can truthfully say he can cure the above infection of the non-gonorrheal type. In recognizing this fact many a physician who has heretofore considered the silver preparations as inferior or ineffective anti-gonorrheal remedies will change his views, and so will the physician gain more confidence in himself, who thought it was his own fault that his cases of gonorrhea did not get well. A clear understanding of the situation will enable him to tell his patient at his first examination what he has to expect concerning an early and lasting recovery. To further this end and perhaps also to find as positive a remedy for this type of urethral infection as we have it in the silver preparations in gonorrhea, the more frequent employment of the microscope and the culture box points the way.

DIET IN TUBERCULOSIS.*

BY MISS ADELLA SATER,
DIETITIAN OTTAWA TENT COLONY.

Osler says: "The cure of tuberculosis is a question of nutrition. Digestion and assimilation control the situation, make the patient grow fat, and the local disease may be left to care for itself. This is the foundation upon which the modern treatment of consumption rests."

Since the treatment of tuberculosis is a question of nutrition, and since it is a recognized fact that no medicine or germicide can take the place of nutritious food as a factor in recovery, is it not essential and of the greatest importance that there should be the same degree of intelligence at work on the food problem, and the proper education required for this branch of the treatment, as for the medical treatment?

*Read at the 55th Annual Meeting, Rock Island, May 17, 1905.

While nutritious food is recognized as essential in the treatment, not enough emphasis has been placed upon it, neither has it been prepared and prescribed as scientifically as possible. In this treatment the dietitian stands in the same relation to the physician as the pharmacist, in other words, the dietitian is the pharmacist.

Ellen Richards says: "When the therapeutic value of food is more fully recognized there will be greater willingness to authorize the expense required in providing the best. If the surest means of securing immunity from attacks of disease is well nourished tissues, then the best handmaid of medicine is that nourishment which will be accepted by the tissues, and which thus aids in vanquishing the enemy which has already gained a foothold."

It may be set down as a positive fact, that the predisposing cause of tuberculosis, the condition under which the disease is able to obtain a foothold, is a lessening of the natural resisting powers, due to the fact that the nutritive processes are deficient. Among the causes of such defective nutrition are underfeeding, defective feeding, improper preparation of the food, over-feeding, and the consequent gastric disturbances resulting therefrom. Believing then that nutrition plays such an important role in the acquirement of the disease, it follows that it is of still greater greater consequence in combating and "vanquishing the enemy which has already gained a foothold."

What is food? Anything which when taken into the body serves to build up the tissues, or to supply heat or energy. Definitions might be multiplied, but the one given will answer our purpose. A food, then, serves one or more of four purposes: To build up normal structure; 2, to diminish the waste of tissue; 3, to supply the waste of tissue; 4, through combustion or oxidation to liberate energy. Any substance, therefore, which performs any one or more of these offices is a food. It may do it to a considerable extent and consequently have great food value, or it may do it to but a slight extent, and have but little food value. In order to know that any given article has great food value or not, a scientific knowledge of the composition, digestion, absorption, and assimilation of food material is necessary.

Taking up the four different food requirements as above outlined, it may be said with reference to the first, that in the absence of marked fever or other complication, especially of the digestive organs, most patients have sufficient appetite and digestive powers to maintain the general nutrition in a fairly satisfactory state. Under these circumstances there is no warrant for interfering materially with an ordinary diet, of well-balanced mixed foods, provided that it be of good quality and well prepared.

When we consider the second and third propositions presenting undue waste, and supplying excessive tissue waste, we are confronted by a more serious problem. As a rule, if a patient without much fever continues to waste, such a fact can oftenest be explained by diminished assimilation. The fatty tissues are consumed first, after which the muscles are attacked. With rest and open air, the diet in these cases becomes one of the greatest problems. We may have to build up muscle tissue as well as to simply add fat to the body. To this end all classes of food must be well represented, and as Harris says the proteids should preponderate. That meat diet is important is easily seen from the fact that the pendulum has swung to the extreme of an almost exclusive meat diet or "Zomotherapy," as it has been called. Certain others have seen in the egg the symbol of life, and have established an almost equally exclusive egg diet. Milk has found equally enthusiastic adherents, and again it has been suggested that the salvation of the patient consisted in frequent ingestion of five or six meals a day. Frequency of meals and regularity in administration are undoubtedly of great consequence. While it is well to cater to the patient's desires, and may be necessary to do so, by giving them what their appetite suggests to a certain degree, still we must not lose sight of the fact that the food must contain the elements of nutrition in proper proportion.

Since the careful preparation of food is recognized to be of vital importance to the invalid, and especially to the tuberculous patient, where so much depends upon the amount and quality of the food which can be assimilated, the food should be prepared in such a manner that patients derive the greatest amount of nutrition from its consumption, and also in such a way as to make the least possible tax upon the digestive system.

It is not only essential that the food served be nutritious and wholesome and palatable, but also the service be dainty and aesthetic. Neatness and attractiveness go a long way toward making food palatable; therefore this should be taken advantage of.

The appetite must be encouraged in every way possible. Sometimes an appeal through the senses brings about desired results. The sense of sight, by having a well furnished dining room, and tables artistically arranged, and when possible decorated with flowers. To the sense of hearing, by music. Let the music be of such a nature as to appeal to the patients, making them forget self and putting all into a happy frame of mind. To the sense of taste, by having the food well prepared and daintily served. To the sense of smell, by having well savored food.

In selecting a menu, monotony must be avoided. My experience has been that a higher standard of efficiency is attained and maintained by a variety of food, a change being made from one kind of meat to another, from one kind of vegetable to another, always, however, giving the body the foodstuffs in proper proportions to supply its demands. Every meal must therefore be the result of the concurrence of all kinds of practical and scientific considerations.

It is not enough that the different classes of foods are represented, but the proportion of the ingredients must be proper. It is quite possible that any given food may have all the required constituents, but there may be too much of one, and too little of another. Lack of one nutritive constituent is probably commoner than a deficiency of all, or in other words, an ill-balanced diet is more frequently met than one which is deficient all around.

The conclusion must be that a mixed and well balanced diet is the proper basis for feeding. For the nitrogenous supply we must rely upon meat, eggs, milk and leguminous plants. Vegetables and fruits are served in sufficient amount to keep the diet well balanced.

Fat seems to be of special value in the diet of phthisis, but frequently we find that fats are very obnoxious and repulsive to tubercular patients. But by giving them the more easily digested forms such as cream, butter, bacon and nuts, and combining them with other foods in such a maner that they do not realize they are getting fats, we have no difficulty in persuading them to take a sufficient amount. Cakes and pies are omitted from the dietary.

The appetite is no reliable criterion as to the amount of food that may be taken and digested by the patient. If the digestive organs are not impaired, there is as a rule no difficulty in getting the patient to gain in weight. The tuberculous individual who has a poor appetite, or a disgust for food, can usually digest much more food than he is willing to eat. His digestive powers are much better than his appetite would indicate, and it is surprising how much food can be taken and digested by one who spends the greater portion of his time in the open air, even though not exercising.

At the Ottawa Tent Colony each patient is expected to take daily from two to three quarts of milk and from six to twelve raw eggs, in addition to the three regular meals.

The following sample menu will illustrate the composition and balance of ration composing the meals:

BREAKFAST, 7:30.

Oranges.

Oatmeal and Cream.

Beefsteak and Potatoes.

Bread and Butter. Graham Gems.

Milk. Coffee.

LUNCH, 10.

Milk. Raw Eggs.

Nuts.

DINNER, 12.

Roast Beef. Potatoes.
Cream Corn. Buttered Peas.
Olives.
Rice and Dates with Whipped Cream.
Milk.

LUNCH, 3.

Same as above.

SUPPER, 5:30.

Oyster Stew.
Baked Potatoes. Egg Souffle.
Fruit.
Tea. Milk.

LUNCH, 8.

Milk. Raw Eggs.
Nuts. Fruit.

The following are some of the gains in weight, which may be accepted as one of the most marked evidences of improvement. One far advanced case, whose weight on admission was 84 pounds, gained 30 pounds in 140 days. Another of the same class, whose weight on admission was 103 pounds, 24 pounds in 85 days. Another incipient case, 13 pounds in 21 days. A second stage case, 10 pounds in 10 days. Another, 16 pounds in 28 days. It is nothing unusual for patients who are doing well to gain from 3 to 6 pounds a week, especially during the earlier part of the treatment.

The principles of food reform are basic and fundamental to all physical, mental and moral progress. This statement may seem an exaggeration, but it is based upon the physiologic fact that our bodies are made up of what we eat. Both structure and function are dependent upon nutrition. It is gratifying to know that not only physicians and intelligent laymen, but even military and governmental authorities are giving increasing attention to questions of nutrition as related to various phases of human welfare.

It has been said that hygiene and diet are the foundation stones upon which may be constructed successful therapeutics in the cure of tuberculosis. These are not the only factors in the restoration, but they are so much, and embrace so much, that without them our best efforts avail nothing. The assertion has been made "that without special care in hygiene and diet there is no cure for the tubercular, but that with this care things are possible."

Discussion on Miss Sater's Paper.

Dr. J. W. Pettit, Ottawa: It is at my suggestion that this paper appears on the program, and it is for the purpose of emphasizing the necessity of the balanced ration in the treatment of tuberculosis. The term "balanced ration" is one that is not found in the text-books. It is a military term, and applies to the feeding of soldiers. It occurred to me that inasmuch as the feeding of tuberculosis patients is such an important matter it should not be left to chance. We all know the importance of technique in surgery. I think technique is quite as important in the treatment of tuberculosis. In fact, it is important in anything, if you expect to get results.

The tendency at the present time is to be indifferent to methods, because the agents used are familiar to everyone. Now, that is the rock we are likely to split on in the treatment of tuberculosis. There is too much of a tendency to believe that any old thing is good enough for the tuberculosis patient. That all that is necessary is to bring in the fresh air, food, rest, and exercise. True, that is all there is to it, but you have not said all when you stop there, and that is not where we should stop.

If diet is of importance in the treatment of tuberculosis, and, I think, that it will not be questioned that it is, then, it should be given in a scientific way. We all know that we cannot follow the whims and caprices of patients in anything, especially not in the matter of diet. What they want to eat is not always what they ought to eat. An ordinary patient cannot digest very much more than the appetite calls for. That is one thing that we must bear in mind. Therefore we must supply for them the elementary principles of food, the essentials, so as to not have one over-balance the other.

The diet should be made up by one who has a scientific knowledge of food values, and with that end in view, I introduced domestic science into this work. Miss Sater is a graduate in domestic science; was a teacher in the Lewis Institute, in Chicago, a demonstrator at Farmer's Institutes throughout the country, and she knows the food values; knows what they are. She figures out a bill of fare for seven days, 21 meals. She has, first of all, reference to the value of each food she uses; then, its palatability, and the other things she has mentioned in the paper.

Each day, every patient who can take the full diet, gets one hundred per cent of everything he ought to have. Of course, the patient who cannot use that, does not get it. There is this about the diet we give them; although we are feeding them six times a day, yet they do not tire of what they get. The patients who have been there three months will eat just as readily as those who have been there only a week.

Now, all you who have ever boarded, know that you get tired of the best table you sit down to, no matter how good the food is. That, to my

mind, means that you get tired simply because you do not get a balanced ration. The reason our patients do not tire of their diet is because they get everything they need, almost to a mathematical nicety.

If we are going to lose sight of the importance of food in the treatment of tuberculosis, we will lose sight of one of the cardinal principles in the treatment of this disease. I do not wish to be understood as depreciating the value of fresh air, but there is too much of a tendency just now to believe that all we must do to cure a patient of his tuberculosis is to have him sleep out in a tent or on the porch. Of course, that is important; but as between good food properly prepared, and a fairly good air, I would say that good food is more important. I would rather undertake to treat a case of tuberculosis in the heart of Chicago, where the air is bad, with good food, than to put out anywhere on a prairie or plains of Illinois, give him all the fresh air possible, and cheapen the food or have it prepared unscientifically. I believe, that is not too strong a statement to make.

The tuberculosis patient has little enough chance at best. Let us not minimize anything that makes for his welfare, and there is certainly nothing more important than food.

Dr. A. C. Croftan, Chicago: I consider the position taken by Dr. Pettit to be a very strong one in the treatment of tuberculosis. Fresh air can be secured in any back yard; but scientific dieting can only be carried out in a well regulated institution. Those of us in Chicago who try to have even the simplest dietetic determinations made in our hospitals know to our sorrow how difficult it usually is to have them properly carried out. Nurses, internes, the patients and the management all seem to conspire against accurate work.

I should like to ask Miss Sater how they avoid the error of routine in Ottawa. If I understand her correctly the food values, presumably expressed in calories, are calculated. Is that calculation based on normal standards? Is it based on standards for febrile patients? Or do you individualize in each case as you should?

Let us say that you give a patient a certain amount of nitrogenous food and that from this you calculate the nitrogen intake. The nitrogen output in the urine and the faeces should then correspond to the nitrogen intake if the patient is to be in nitrogen equilbrium, i. e., if adequate nutrition is to be maintained. In dealing now with cases that are febrile and that consequently, as we know, burn up an abnormal amount of their own tissues, you must of course, administer more nitrogenous pabulum than to a normal subject to maintain nitrogen equilibrium.

Do you determine all these factors or do you stuff febrile patients at random with nitrogenous food relying more or less upon guess work whether they are getting enough, too little, or too much?

I do not know which would be the greater danger to avoid, the under-feeding or the over-feeding of many of these cases of tuberculosis. I should like to ask Miss Sater whether these people, appetite or no appetite, fever or no fever, dilated stomach or disordered liver or deranged kidneys or what not, are all placed on forced feeding.

May it not be extremely dangerous in certain cases to overtax the motor powers of a dilated stomach, or the eliminating powers of diseased kidneys, or the disintoxicating function of an insufficient liver by giving too much albuminous food? Are you not afraid occasionally to overtax a straining cardio-vascular system with your excessive liquid intake when you give so abundantly of milk?

What I am getting at is: Do you find it possible and do you take the trouble to individualize? I consider that exceedingly important and I fear that unless this is done that the benefits derived in single cases from forced feeding may well be neutralized in others by the harm accruing from injudicious stuffing.

What I am saying is not advanced in a spirit of criticism, for I admire immensely the work that has been accomplished so far by Dr. Pettit and his co-workers with scanty means and scanty support. I think it is most commendable that so many progressive things are being attempted so soon after the establishment of the Colony. All I want to know is what you have so far found to be practical of execution, realizing all the time that you are fully aware of what the ideal might be and what should be done on theoretical grounds.

I congratulate Miss Sater on the able presentation of her report and Dr. Pettit on having so enthusiastic and competent a co-worker to help him carry out his dietetic ideas.

Dr. Fenton B. Turck, Chicago: The subject of dietetics as applied to tuberculosis is a similar problem to that we have to solve in many other wasting diseases. The great trouble is that we are not educated sufficiently and have no knowledge of dietetics. The farmers are better posted on how to feed their hogs properly than we are on how to feed our patients, because the United States Agricultural Department has established laboratories throughout the States, and they know not only how to feed hogs, but how to feed them properly in the various sections of the country, because there is variations among hogs. The reason why Americans have exerted themselves so much in this direction is because a hog has a greater marketable value than a human being. A hog can be sold on the market, whereas a human being cannot.

This is a great problem, and this little institution established by Dr. Pettit deserves great credit for having established, in the face of this opposition today, a place where this question is being solved. This is a movement in the right direction. It is a little laboratory carrying on investigations in dietetics, and they have presented some points of great value,—the value of feeding and the manner of feeding.

I would like to mention only one point in connection with meat, for meat has in it not only nitrogen, but something else, and that is the biologic element, the fighting of toxins. Meat

is one of the strongest and best elements we have at our command for increasing the antibodies. The trouble is that as soon as certain quantity is used, meat becomes a toxin. Therefore, too much meat should not be given. The extractives are toxins and they have no food values whatever. If you remove all the bouillon from meat you have left the nutritive part which you cannot remove by boiling. The only way is by comparison and cold. The meat is ground up fine and put into compress. The removal of forty per cent of water and the extractives increases the food value of the meat and lessens its toxicity.

If this meat is put into an autoclave at fifteen pounds pressure, you can remove all the extractives, and besides that the tissue is transformed into gelatin. That is the important thing in digestion because we can feed large quantities, 200—250 grammes, and that without any disturbance whatever and without producing any toxic effect, and in it, we have a very valuable aid in fighting the toxic condition we find in tuberculosis and many other conditions.

This is an important practical point, and is also of scientific value in that we have to increase the nitrogen intake and output and avoid the toxins as well as fight them. The digestibility is an important thing for the motor power of the stomach, and usually in this condition, it is impaired, so that the stomach is incapable of emptying itself in the necessary time. Perfect motor power is necessary for good digestion.

Dr. J. W. Pettit (closing the discussion for Miss Sater): It was extremely difficult for me to prevail upon Miss Sater to present this excellent paper. In common with other really capable people she is too modest to take part in the discussion, therefore I will close for her.

The purpose of Miss Saters paper is to emphasize the value of food in the treatment of tuberculosis, and the fact that the diet of the patients should be prescribed scientifically and not left to chance. It is not pretended that this can be done with mathematical exactness, but the nearer we approximate a mathematically balanced ration the more nearly do we conform to scientific principles. In doing this we must keep in mind all the other factors which enter into the question of nutrition which must not be ignored.

There is a tendency at the present time to lay too much stress upon fresh air and too little on food. We cannot have too much fresh air, but if we place our sole reliance upon this valuable agency we will fail in many cases where a proper attention to diet would have insured success.

In answer to the many pertinent questions which have been asked, my reply is that we are not in a position just now to answer them. You must bear in mind that in the short time we have been at work it has been impossible for us to pay strict attention to the smaller details. We have only been giving attention to the prime essentials. You can ask us many questions which we cannot answer, and all of you tell us many things we do not know. We crave the indulgence of the profession in the many imperfections of our work. We are doing the best we can with our limited knowledge and the very meager equipment at our command. If this paper shall serve to bring the importance of diet in the treatment of tuberculosis more prominently to the notice of the profession, it will have accomplished its purpose. If we fail in this particular we will lose sight of one of the cardinal principles in the treatment of this disease. Patients suffering from tuberculosis, especially in the advanced conditions which we are now receiving them, has little enough chance at best. Let us not minimize anything that makes for their welfare. There is certainly nothing more important than food.

THE TREATMENT OF ERYSIPELAS WITH ISUARDIA PALUSTRIS—MARSH PURSLANE, WITH REPORT OF CASES.

BY H. C. MITCHELL, M. D., CARBONDALE.

When Solomon said, "There is nothing new under the sun," I am inclined to think that he spoke better than will at first appear.

When an all-wise Creator created man, He provided for him all things necessary for his use. There was nothing created that had not its use, when that use could be determined. When God created a poison, He created its antidote, and often placed them side by side.

While the treatment of Erysipelas with Marsh Purslane has never been given to the medical profession at large, yet it is an old remedy, and was given to me by my father, who practiced medicine in Southern Illinois and Indiana for nearly 50 years.

The remedy had been given to him by his preceptor, who practiced medicine in Indiana as early as 1835. Where he obtained the remedy I do not know.

I am unable to refer you to any literature on this subject, as I have examined a number of works on materia medica, and have conferred with several gentlemen of national reputation on materia medica, such as William E. Quine, of Chicago, and H. C. Wood, of Philadelphia, and they say they have never heard of the drug.

I shall therefore be compelled to give you my personal experience with the remedy, and that of my brother, Dr. J. H. Mitchell, of Mt. Vernon, Ill., who has kindly given me reports of some cases, treated by him, which I have incorporated in this paper.

I shall probably not be able to describe the plant so that you would be able to recognize it at sight. The name of this plant as given to me by my father was Walink, or Water Purslane.

It grows in great abundance in Southern Illinois, in marshes and along the edges of ditches and ponds that are drying up. It is described in the botanies as Isnardina Palustris, Marsh Purslane. The stem of the plant is procune, bent or floating, smooth, branching and rooting at the joints where near touching the ground, succulent; leaves opposite, and about one inch long, oval or spatulate, narrowed at the base into a short petiole, smooth, margins entire. The flowers are small, almost inconspicuous, solitary and in the axils of the leaves; of a dull-reddish color, produced in early summer, followed by a small four-sided capsule. It does not belong to the ordinary purslane family, as its name would imply, but its relatives are the evening primroses.

I have never used the remedy except locally. I gather the plant in the green state, and bruise stem, leaves and all, and apply in the form of a poultice to the erysipelatous surface. The effect is certainly magical. I have often used the remedy in the worst forms of the disease, where the head and face were swollen out of all semblance to a human head, the eyelids swollen so that there was only a line where the eyes should be, the nostrils so swollen that the patient could breathe only with the greatest difficulty, the maximum temperature running as high as 105½° F., the patient often delirious, tossing from side to side ,suffering with severe pain and burning, and unable to rest or sleep in any position. The remedy would not be applied more than a few hours until the pain and fever would begin to subside, and in a short time the redness would begin to pale, the swelling diminish, and the patient would convalesce in a very few days.

Case First.—Soon after my graduation from Chicago Medical College, in 1879, I was practicing medicine (or wanting to practice) in Southern Illinois. A farmer came to my office one morning and said that his little girl, three years old, was suffering with a swelling in her face, which he believed was erysipelas. I put some remedies into my medicine case and sallied forth to meet the enemy, feeling confident that when I did, I would conquer him in a very short time. Arriving at the house I found the little patient suffering with erysipelas of the face. The eruption covered the nose and a portion of the forehead, the temperature 101½, otherwise she was fairly comfortable. I prepared a wash consisting of acetate of lead, opium, etc., and directed five drops of tincture of iron to be given internally every three hours. On visiting the patient the following day I found the disease had spread over nearly the entire face, temperature 103, patient complaining of burning, and quite restless. The third day the disease had extended over the entire head and face, temperature 105. By the fourth day the swelling had extended to the neck and front of the chest; the eyes were completely closed, nostrils and lips so swollen that it breathed only with the greatest difficulty, temperature 105½, patient delirious, restless, and rolling its head from side to side, having slept none for more than 36 hours. I had consulted my works on practice and exhausted all my remedies for the treatment of erysipelas, and yet my patient continued to grow worse; so, in my desperation, I called into consultation my father, who had retired from practice several years previously. After consulting with him, he informed me that if I would get some Marsh Purslane and bruise and apply it locally as a poultice it would soon effect a cure. The purslane remedy was applied, and I left a call for the following day. To my surprise, the father of the child was at my office the following morning and said it would not be necessary for me to visit the case, as the weed the "old doctor" had prescribed had nearly effected a cure. He said in about two hours after applying the poultice the child got easy and went to sleep and had slept ever since.

The fever was gone, and the redness and swelling had rapidly subsided. The result was the case went on rapidly to convalescense. When the man came to settle his bill, he said he "thought I had better forget what I had learned about erysipelas at college and take a few private lessons from the old doctor."

I practiced medicine for over eight years in that same locality and during that period I treated a number of cases of erysipelas, some of them being of a severe type, and nearly all of them were treated with the Marsh Purslane, except such as occurred in winter and the early spring when the weed could not be obtained. In all the cases the results were equally as good as in the case reported, in fact, I learned to rely so fully on the remedy that when I was called to treat a case of erysipelas (and especially one in which the pay was at all doubtful) I would send them for the Marsh Purslane, and, so far as I know, it never failed to give entire satisfaction.

When I moved to my present location, more than 17 years ago, I was unable to find the weed, and for a number of years I used the remedies prescribed in our works on practice.

Case Second.—In July, 1899, I was called to a neighboring town in consultation, to see a man with traumatic erysipelas. He had been cut across the leg with a sickle, and erysipelas had supervened. He had been suffering with the disease for about twelve days. It had gone entirely up the leg and body, and across to the opposite side, involving the genitals and gluteal region, and down the opposite leg to the knee. The parts were enormously swollen, and the man's condition extremely critical. It was plainly evident that unless he could get relief soon he would die. After I had finished my examination of the case, a good "old mother of Israel" came up and introduced herself, and said, "I used to know your father." She said, "I told the attending physician and family, I know a weed that, if applied to the erysipaletous surface, would cure it. I saw your father use it once in a case, and have used it many times since, and it never failed to cure." I had her describe the plant, and felt sure that it was the Marsh Purslane. I requested that the attending physician try it, which he did. The doctor afterward moved west, and I never saw him for two years. When I did he told me that after applying the remedy, there was a marked improvement inside of five hours, and that the case went on to rapid convalescence, and in three or four days he had only the suppurating wound of his leg.

Case Three.—During the month of August, 1904, I was called in consultation with Dr. Etherton, of Carbondale, to see a child, about three years old, suffering with erysipelas in the leg and arm. The disease in either case began near the hand and foot and spread rapidly toward the body. The limbs were enormously swollen, the temperature often running to 105 F., the average temperature being about 103. The case had contracted the disease nearly one week prior to the time I was called. The doctor had pretty well exhausted the usual lines of treatment. We continued to treat the case together for three or four days, but it grew rather worse instead of better. The disease extending gradually upward toward the body. The case grew weaker from day to day, until our patient was well nigh exhausted and the family greatly alarmed. I suggested that we try the Marsh Purslane. The father, being a man of means, said for us to spare no pains or expense in procuring any remedy that we thought would relieve it. I accordingly wired for the Marsh Purslane, and in 48 hours had a good supply. The first poultice was applied about 2 o'clock p. m., and at 6 o'clock of the same day I was called to the 'phone by the mother of the child, who said it grew easy in about three hours after applying the remedy, and that it had slept continuously. The redness and swelling had greatly diminished and the case was markedly better in every way. This case convalesced rapidly and was well in a few days.

Case Four. During the time I was treating this case I was called to a neighboring town in consultation with Dr. H., to see a case of erysipelas that had extended entirely over the left leg and thigh and left side of

the abdomen. Parts were greatly swollen and temperature running high, as in the other case. This was a case of about nine or ten days standing. The Purslane remedy was applied with equally as prompt relief as in the other case.

Case Five.—This case I have reported because I used the remedy in the form of a decoction. This patient was aged 65 years. On February 2, 1905, he was attacked with la grippe, which confined him to his bed for about one week. At the end of that week he did some work and underwent some exposure that threw him down again with all the concomitant sequela of grip. He had a hard chill that required nearly two hours to bring about a reaction, the temperature running to 105 F. These rigors occurred every 24 hours with greater or less severity, and sometimes two in 24 hours. The temperature never falling below 102 for more than 10 days, at the end of which time I called in consultation Dr. J. L. Wiggins, of East St. Louis, and Dr. McAnally of Carbondale. They agreed with me in the diagnosis, viz., that it was due to toxines in the blood, due to la grippe, that was affecting the secretory and glandular organs, such as the liver, kidneys, spleen and pancreas. The fever continued uninterruptedly for about six weeks, when he became badly jaundiced. The common duct was probably entirely closed for about two weeks, as the alvine evacuations showed no coloring matter of bile whatever. The urinary secretion was, during that period, heavily loaded with bile. At the end of about three weeks, the patient was greatly emaciated and very weak. He contracted erysipelas of his face. The face and head became greatly swollen, the temperature running as high as 104, eyes completely closed. I tried the usual remedies for three or four days without any apparent improvement, when I remembered that I had gathered a quantity of Marsh Purslane, which was then in a dried state, to exhibit at this meeting of the Association. I directed the nurse to make a decoction of it and apply it on cloths, which she did. Case responded to the treatment in a very few hours and at the end of 48 hours was almost entirely relieved.

Case Six.—C. R. W., trainmaster I. C. R. R. Co., contracted erysipelas of his face April 20, 1905, the disease first making its appearance behind the right ear, and in less than 48 hours had spread over the entire face and head. The minimum temperature being 101 2-5 F., while the maximum was 104 3-5. The treatment in the beginning consisted of cutting the hair short, scrubbing the skin with sterilized water and soap, bathing the surface with a 1-3000 bichloride of mercury solution, and afterward applying cloths saturated with a solution of chloride of zinc. For internal administration I gave him tincture of iron in 25 drop doses. The above treatment was persisted in for about 48 hours when there was no improvement. I then painted the skin with tincture of iodine and applied a solution of acetate of lead and opium. At the end of 72 hours of this treatment the case seemed much better and the eruption nearly gone, but in less than 24 hours the eruption had reappeared on the nose and forehead, and in a short time had covered the entire head, neck and a greater portion of the back. In about four days the rash had pretty well faded from the face and neck, but had covered the entire back, gluteal region and arms. Feeling somewhat discouraged, I concluded to try the Marsh Purslane. After driving over three or four miles of swampy country, I found just enough of the weed to make one poultice. The poultice was applied about 8 p. m. and remained on till the following morning, when I found the temperature normal, the eruption had stopped spreading and the redness and swelling greatly reduced. Using the patient's own expression, he said: "I went to sleep and slept like a baby all night, and this morning I feel like a winner." Having no more of the Marsh Purslane, we were compelled to resort again to other remedies. Fifteen hours after leaving off the Marsh Purslane he had a chill, the temperature running up to 105, the eruption spreading rapidly over the sides and front of the chest. Inside of 36 hours had covered the entire body and arms. By this time, however, I was able to get enough of the Purslane to make two poultices, which I applied for 12 hours each. At

the expiration of that time the temperature was again normal, the spreading had stopped and the rash and swelling rapidly subsided. The Purslane remedy being again exhausted, I washed the skin with a bi-chloride of mercury solution and applied a poultice, consisting of ichthyol and antiphlogistine, the case going on to convalescence in four or five days.

The test of the remedy in this case seems to me to have been a severe one, but one in which the Purslane remedy was not found wanting.

I have several other cases reported by my brother, Dr. J. H. Mitchell, that will be published with this paper, but as my time has expired I will not read them.

I want to say in conclusion, that I consider Marsh Purslane by far the best remedy I have ever used for erysipelas, and if you should ever have occasion to use it, I feel sure you will not be disappointed in the result. This remedy should be placed in the hands of some of our manufacturing chemists so that its virtues might become known and prepared in various forms for our use.

Cases Reported by Dr. J. H. Mitchell, Mt. Vernon, Illinois.

Dr. Mitchell says: "I consider Marsh Purslane a specific in the treatment of erysipelas and poisoning by the Rus-Toxicodendron (poison oak) when properly applied."

Case First.—In the year 1875, some time during the early autumn, my father and I were on our way to attend a man that had fallen and broken his arm, when we were met by Mr. D., who asked me to visit his wife, who was suffering with an attack of erysipelas of her face and head. He stated that, in his opinion, she had the disease very badly, While I was telling him that it would be impossible for me to see her that day, my father, who was a very close observer of the habits of plants and animals, had been investigating our surroundings. The place where we had stopped was low and marshy. He told Mr. D. to get out of his buggy and get a quantity of the plant, which he pointed out to him, take it home, wet and mash it, and put it over his wife's face. He also told him if his wife was not very much better, to report the following morning, and I would see her. He did not report until the second day, when he stated that she was about well, and that the application had given almost instant relief. No further treatment in this case being deemed necessary.

Case Two.—This case was not so specifically successful. Some time in June, 1880, I was called to see a Mrs. W., aged about 50 years, who was suffering with erysipelas of one of her legs, extending from the foot to the trunk. I treated her heroically and, as I thought, scientifically, for one week, exhausting the whole plane of therapeutics, as it appeared to me, when I thought of Marsh Purslane. I directed the husband how to procure, prepare and apply it. This treatment was persisted in 1or 24 hours, but because the case was not entirely cured in that time, and the remedy being of something so cheap and common, my services were dispensed with, to my entire satisfaction, as both the patient and sanitary surroundings were of the poorest.

Case Three.—May, 1881, I was called to attend Miss Y., aged about 12 years, who was suffering with erysipelas of the head and face. The eyes were swollen and completely closed; the neck and chest were also involved. I treated her for about one week, as I thought, correctly, without any apparent benefit. The disease kept invading new territory, when I decided to try the Marsh Purslane. This was obtained and applied as in the former cases. When I visited the patient the following day, I found her greatly improved. She had rested and slept from the time of applying the remedy, a thing she had not done since she was taken sick.

This family was subject to erysipelas, as some one of the family was a subject to the disease almost every spring. After this case, however, the father was the attendant when any member of the family was stricken with the disease. On the first appearance he would resort to the Marsh Purslane, and, as he frequently told me, with entire success.

Case Four.—July, 1881, was called to J. S. H., aged 82 years, who claimed to be an eclectic physician. He had an indolent ulcer

of his leg that had given him trouble for a number of years. This became infected with erysipelas. When I saw him he had treated himself for a number of days. The leg was swollen to twice the size of its fellow, and the disease extending entirely to the body. Again I resorted to all the remedies that seemed to me to be indicated, but the patient grew constantly worse and the disease continued to spread to new territory, until the family, and even the medical attendant, began to anticipate the death of his patient. As a drowning man will grasp at a straw, we welcomed the thought of trying the virtue of Marsh Purslane. I directed the son of the patient to come with me to a place where I had seen the plant growing. We gathered a market basket full, took it home and applied it as directed. The patient soon became easy and sleep supervened, lasting for all of 24 hours. When I heard from him two days later, he was almost well, and only wanted a fresh supply of the remedy. Without further attention from me, he soon recovered. Upon being interrogated as to what he would do in the event he should ever meet up with another case of erysipelas, he replied that he would send for the Marsh Purslane at once.

Discussion on Dr. Mitchell's Paper.

Dr. J. M. G. Carter, Waukegan: I have been delighted to hear this almost epoch-making paper. I am especially pleased to note that at this meeting, as well as at others lately, there has been a tendency to turn from the mineral remedies toward the vegetable kingdom for new remedies or for a better understanding of the old. During the last few years we have been drifting almost entirely toward chemical formulas for new remedies, and it is certainly very gratifying to learn that we are coming back to the old well-tried vegetable remedies for our therapeutic effects.

Dr. Edw. Ochsner, Chicago: In discussing the subject of erysipelas, one must make this first postulate. Erysipelas is a self-limited disease, and, providing, the physician or surgeon does not injure the patient, that patient is almost sure to get well. Physicians and surgeons have done more harm than good in the treatment of erysipelas. I think that statement is perfectly correct. Personally, if I were to have erysipelas again, as I once had it, I would rather have no physician atend me than be subjected to the ordinary treatment that is given in cases of erysipelas.

Ten years ago I had the exceptional opportunity of treating 47 cases of erysipelas in the course of six weeks. The Cook County Hospital, at which I was then an interne, had an epidemic of erysipelas, and I had the opportunity to observe these 47 cases. I tried all the remedies that were mentioned in the literature, except those that seemed too irrational and too violent. I could not persuade myself to inject sulphure or tincture of iron or carbolic acid into the margin of the lesion, but I tried all the other remedies that seemed less harmful. Iodine was the common remedy then in vogue, but the patients all had a chill immediately after using it, and so I stopped its use. I finally came to the conclusion that if one will not do absolute injury, we should relieve the intestinal tract of fermentative products and apply some simple poultices, and your patient will get well always and in a great hurry.

I analyzed these cases and found that the average duration of the disease, if not too vigorously treated, was 96 hours. I had some cases that were desperately ill. I had one, a medical student, who had a post-mortem sepsis of the finger before he had the erysipelas. His temperature went up to 106° F., and remained there for two or three days, but as we concluded not to kill him, he got well. If I had decided to use all the then used remedies, the young man would probably not have gotten well.

I have since had an opportunity to treat from three to five cases a year for the last ten years, making, probably, 85 or 100 cases in all, and I lost only one. He died as the result of a compound fracture of the skull.

I think the virtue of the doctor's treatment is that he does not do any harm. I apply an alcohol boric acid compress, not because there is any virtue in it, but because it prevents the patient from doing anything that will harm him. The mere fact that there are hundreds of cures for erysipelas is proof positive in my mind of two things: That there is not any one that amounts to anything, and that if you give the patient half a chance, he will get well anyway.

Dr. A. W. Baer, Chicago: Boric acid and alcohol applied to an inflamed surface is not harmless.

Dr. W. C. Abbott, Chicago: I have been very much interested in this paper as well as in the discussions, especially that by Dr. Ochsner. You can help erysipelas, and you can hurt erysipelas. Erysipelas is a mixed infection, a germ infection surrounded by inflammatory conditions, and the whole thing is an attempt of nature to get rid of trouble. As Dr. Ochsner very properly pointed out, if you go in unwisely without studying the disease you expect to treat, without due regard for what is and what you are going to do and ought to do, you are going to do more harm than good.

Perhaps it is true that erysipelas is a self-limited disease, because usually the disease disappears before the patient dies, but the man who knows his therapeutics, who knows what will do harm and what will do good, can help that self-limited disease to limit itself quicker than it otherwise would.

I would like to ask Dr. Mitchell whether he knows the special principle in this marsh purs-

lane which makes it better than the hot-water cloth or any other form of poultice.

Then again, you can do something through the circulation. You have two conditions there, to which, I think, you will all agree. When the inflammatory condition is set up and infection goes on, and you overcome the general condition, you come to the matter of a very serious local condition, and in that way you can help nature.

Years ago able men, in discussing and hunting for remedies of this class and character, hit on the old fluid extract of Jaborandi and many men in this country would stand up, if here, and vouch for the value of Jaborandi in erysipelatous conditions, given to the full physiological effect. It has since been learned through study in isolation of active principles that jaborandi depends for its efficacy on the contained pilocarpin, and that the other principle, occurring in varying quantity, jaborine, is one of the detrimental substances of the drug. Pilocarpin will drain away the congestion, but behind it all is recuperative power and that cannot be given by any sort of therapeutics. Take away from the patient his resistance, and reduce his strength to get well and you do him harm. We must only do good, not harm.

I do not want you to feel that the whole story is told when the surgeon says you cannot do anything for erysipelas. He is right and he is wrong. Both of us together have given you about the right idea.

Dr. George F. Butler, Chicago: I wish to thank Dr. Mitchell for presenting such an excellent paper. We all know that Dr. Mitchell is a careful and able physician, and his statement of cases treated by isnordia palustris seems to show that benefit is to be derived from the use of this drug.

It has been the tendency of the regular profession, and especially the surgeons, to oppose any vegetable remedy. There is not a single indigenous remedy today that was introduced by us. They have been introduced by the eclectics and we have been forced to accept them. Even such a good remedy as cinchona had to fight its way against opposition of the conservative members of the profession.

We should welcome a remedy which seems to be as valuable as this one, and we ought to try it. No man should stand up and say that this is not good for erysipelas unless he has had some experience, and I, personally, want to thank the doctor for bringing the matter to our attention.

Dr. Wm. F. Waugh, Chicago: There is one material point in Dr. Mitchell's paper which has not been noticed and which ought not be allowed to go by, and that was the case in which the application of this remedy was followed by a distinct improvement. When the remedy was discontinued, the erysipelas reproduced itself, and a re-application was again followed by improvement.

This is not the ordinary or common course for erysipelas to pursue, and could hardly be attributed to the natural course of the malady. A similar phenomenon has shown itself with a number of cases I have treated with pilocarpin. I have given pilocarpin until a facial erysipelas was reduced; then stopped the pilocarpin, and the erysipelas reproduced itself over half of the face. I repeated this not once, but two or three times until I was satisfied that the remedy actually controlled the disease and that it was not the natural sequence of the eruption. This being done with pilocarpin, there is no reason why it should not be done with other remedies, such, for instance, as Dr. Mitchell presented to us.

Dr. M. S. Marcy, Peoria: Like Dr. Mitchell, when I left college I started out to cure everything. The first case of erysipelas I had my wife told me of a remedy her mother used to use—pounded cranberries used in the form of a poultice. That remedy has never failed me, and I use it to this day. There is nothing that will do erysipelas more good, except Dr. Mitchell's remedy, than pounded cranberries.

Dr. Mitchell, (closing the discussion): Dr. Ochsner's theory of erysipelas reminds me very much of a story I once heard. A man bought a fine gun on trial. He took it home and shot it a number of times, but it didn't shoot well at all. So he took it back to the merchant and said to him, "'Theoretically your gun is all right, but practically' it isn't worth a d-m.' Now, Dr. Ochsner's theory of erysipelas may be all right, but practically we all know it will not hold water. There is not a physician here who has treated many cases of the disease but knows that it will not terminate in resolution in from seventy-two to ninety hours. The cases I have reported, have every one of them continued for more than a week and some of them for three weeks, and would doubtless have lasted much longer, had they not been treated with the Marsh Purslane. I do not understand why the streptococcus-erysipelatous should be any shorter lived, or self limited in its action than the streptococcus or staphylococcus, and neither do I believe they are.

If Dr. Ochsner had to go into private families to treat his cases of erysipelas, as most of us do, instead of having them in a hospital where he can have complete mastery over them, and he should treat them on the hypothesis that the disease was self limited, and required no treatment, he would be treated to the spectacle of seeing most of his patients under the care of the "other doctor" in a very few days. It occurs to me that as erysipelas is a germ disease, and the germ is in the skin where it can easily be reached, that the only rational treatment is to find some remedy that will destroy the germ, and not leave the patient to the mercy of the disease, and taboo all treatment. If we should do this with any other disease, we would be derelict in duty to say the very least. I had no thought but this paper would be attacked as has every other good thing in medicine and surgery. Some one asked what I considered to be its therapeutical action. I think it has anti-germicidal and anti-phlogistic properties, and is slightly astringent, since it relieves so quickly the pain, fever, burning and eruption.

THE OPTIONAL DISEASE.

BY HEMAN SPAULDING, M. D., CHICAGO.

So far as known, smallpox originated in eastern and central Asia, in India and China. Mention is made of the disease as existing in Europe as early as 570. No description of the disease was made until the year 900. In that year Dr. Rhazes, an Arabian physician, wrote a very good description of the disease. The disease did not find its way to Great Britain until the year 1241. Historically considered, smallpox surpassed in importance all other epidemic diseases. None of them has pursued and chastised the human race with such relentless malignancy. None has exerted such a decided influence on the lives of men and nations. It has been carefully estimated that fifteen millions of persons died from this disease every twenty-four years during the eighteenth century. All the inhabitants of Greenland died in one epidemic, and the country was practically lost for 300 years. In 1707 more than one-third of the population of Iceland died in one epidemic—18,000 out of a population 50,000. Smallpox was brought to the West Indies in 1507 by the Spaniards, and in 1527 Cortez carried the disease into Mexico. Within a few years the deaths from this disease among the native Indians numbered 3,500,000. Before the discovery of the protective influence of vaccination by Dr. Jenner in 1796, this disease destroyed, maimed or disfigured one-fourth part of mankind. In Great Britain every third person showed pox marks, and thousands, made blind by the disease, walked in darkness. The disease settled like a pall over the human race, and threw gloom over the pleasure seeking as well as over the toiling world. Parents retired at night and awoke in the morning in fear and dread lest their children should be visited by disfigurement or death from smallpox. It must be remembered that before the discovery of vaccination the disease was mainly confined to children—95 per cent of all the victims were children. Out of 1,000 deaths, 993 were children under 10 years of age. The adult population was largely composed of survivors of attacks in childhood which rendered them immune. One of the striking proofs of the efficacy of vaccination in preventing smallpox is the reversal of this condition. Children vaccinated are immune, but as they grow to manhood or womanhood and neglect re-vaccination, many become again susceptible to smallpox in a modified form. At the present time nearly all cases of smallpox are found in persons over 20 years of age or in unvaccinated children under the school age of 6 years. Vaccination in this country is not compulsory under the school age, hence babies are neglected and an undue proportion of cases are from these unprotected children. We often hear it said that smallpox is a filth disease. It is not. It is no respector of persons. It will attack the cleanly as readily and as furiously as those living in the dirt. It will invade a palace as readily as it will enter a hovel. Of the 5,000 Russian Jews in the Seventh ward of Chicago, not one was taken to the Isolation Hospital during the epidemic of 1894. This ward is one of the poorest and most uncleanly in the city. These people were vaccinated either before coming to this country or as they left the ship at New York. On the other hand, many notable persons have died from small pox. Nineteen members of the royal families of Europe died of this disease, and many others survived severe attacks.

A disease so deadly must have had its influence upon society, and so it did. Early marriages were sought by parents for their daughters who had escaped smallpox in childhood, fearing that the blighting influence of the disease which was almost certain to come and mar their beauty and impair their chances of a desirable marriage. In those days a woman with no traces of the ravages of smallpox on her face could lay claim to beauty no matter how deficient in features she might be. Ben Johnson wrote: "Envious and foul disease, could there not be one beauty in an age and free from thee?" Before vaccination was discovered, everybody expected to have smallpox; there seemed no escape from it. Men were helpless in the face of this destroyer. When an epidemic attacked a city they did not mention the

number of cases of smallpox, but would say so many remain yet to have the disease. It was mentioned in a city of 2,700 population that there remained 360 yet to have the disease. Lord Macauley, in his history, referring to the disease as it existed in the latter part of the seventeeth century, uses this language: "That disease over which science has achieved a series of glorious and beneficent victories was then the most terrible of all the ministers of death. The havoc of the plague had been far more rapid but the plague had visited our shores but once or twice within living memory. The small pox was always present, filling the churchyards with corpses,tormenting with constant fear, all who had not yet been stricken, leaving on those whose lives it had spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and the cheeks of the betrothed maiden objects of horror to her lover."

How easily we could return to those evil days by neglecting vaccination. To show this disease to be a present danger, I will cite recent examples: From 1866 to 1869 in the presidencies of Bombay and Calcutta, with a population of 40,000,000, 140,000 persons died of smallpox. Ten years later, from 1876 to 1879, in the same district, 700,000 persons died of the disease. Again, nearer home and more recent: For many years the French Canadians of Montreal, Canada, have opposed vaccination, and that city found itself with a large unvaccinated population during 1885, when a porter from a Pullman Palace Car arrived there with smallpox. Many were exposed to the disease. In the short space of nine months, 3,164 died of smallpox. The population of Montreal, at that time, was 200,000—one-tenth of the present population of Chicago. Under similar unvaccinated conditions Chicago's death roll from smallpox would reach 31,640—several thousand more than the entire death list in that city from all causes in a year.

The protective influence of vaccination against smallpox is no longer a debatable question among scientific men. That a recent vaccination, or a vaccination with a revaccination, until the susceptibility to vaccinia is exhausted, is an absolute protection against an attack of smallpox, is not doubted by any one who has had experience with this disease. It seems hardly necessary to offer proof of this assertion to an audience of medical men, but I will give a few facts coming under my own observation as proofs of this statement:

No recently vaccinated person with smallpox has been found in Chicago in the last ten years. No re-vaccinated person has had the disease in the same time. No ambulance driver, no undertaker, nurse or doctor connected with the Isolation Hospital, has contracted smallpox, although they are constantly exposed to the disease in all its phases. No vaccinated school child has ever had the disease, though a few unvaccinated in school with false certificates became victims. More than two thousand medical students have visited the Isolation Hospital during the last four years. They were exposed to the disease in all its forms and none of them took smallpox. They were required to have one vaccination and three re-trials unless a second vaccination was secured before the third attempt. Of the 1,810 cases of smallpox admitted to the Isolation Hospital in Chicago in the last four yeas, 1,537 never had been vaccinated, 273 had old marks, but none of them had ever been re-vaccinated. A careful estimate indicates that about 95 per cent of the people of Chicago are vaccinated. You will observe nearly all of the cases—1,537 out of 1,810—came from the five per cent remnant who are not vaccinated. If five per cent of the population furnishes 1,537 cases, 95 per cent should furnish nine and one-half times that number, or 14,601, instead of 273. That is to say, 1,537 cases came from the 100,000 that remain unvaccinated, while but 273 came from the 1,900,000 who are vaccinated. No person vaccinated by the Department of Health has been found to have the disease, though we vaccinate over two hundred thousand yearly.

A vaccination, to be protective, must be made with a potent lymph. A successful vaccination may be known by the presence of vesiculation, umbilication, pustulation,

mild and limited inflammatory area with febrile reaction. In about twenty days from the beginning of the vesicle the resulting scab comes off. This leaves a scar. In babies under three months of age the fever is usually absent. The vaccine lymph now used is not open to the objections formerly urged against it—that of impurity. It is procured from the vesicles on a healthy animal and put into glycerin for a period of sixty days, which kills all disease producing germs but does not impair the vaccine. It is then tested in the laboratory for purity and is rejected if not found free from injurious germs. A small, clean vaccination made with this lymph on a clean arm and kept clean afterwards harms no one and is a certain protection from smallpox. It will protect for about ten years. In many it will protect for life. I have never seen a case of smallpox in a person vaccinated within nine years. Every child should be vaccinated before it is six months old, and again in from seven to ten years. The operation should be repeated from time to time during life to make sure the protection has not run out. Such a vaccination is a small price to pay for complete immunity from so destructive and revolting disease as smallpox.

I believe that every person is susceptible to vaccinia at least once. In more than ten years experience in the Chicago Health Department, no one has been found insusceptible to vaccinia. Many cases have been tried five, six and as many as thirteen times before a "take" was secured, but none were found immune from vaccinia. Inert lymph or faulty technique are responsible for most failures. Do not make a large mark like this: or this: and do not bring blood. Sterilize the arm, throw the vaccine on the arm, then wiih a dull needle go right through the drop of lymph with the point and with slight pressure irritate and abrade the skin until it is red. If your needle is dull you can avoid drawing blood. Do not remove the epithelium from a spot more than one-eighth of an inch in diameter. Make but one mark and make it this size:

Discussion of Dr. Spalding's Paper.

Dr. H. G. Anthony, Chicago: Dr. Spalding is entitled to the credit of being the only officer connected with the Chicago Department of Health who has made an effort to lay before the profession the observations made in that department, and he is entitled to the thanks of the profession for giving us the benefit of the enormous amount of material he has had at his disposal.

Speaking of the prodromal eruptions of smallpox, he mentioned an eruption which resembles scarlet fever, and another which resembles measles. There is another form which has come under my observation, one which gives the general practitioner a great deal of trouble, and that is the eruption of a few pimples on the abdomen which is usually mistaken for the eruption of typhoid. However, the time at which that eruption appears distinguishes it from typhoid. I remember one case in which a diagnosis of typhoid was made, and the physicians in charge were unwilling to accept a diagnosis of smallpox until after the typical eruption appeared.

Dr. J. M. G. Carter, Waukegan: I wish to ask Dr. Spalding what in his opinion, is the minimum precaution that an immune physician should take with regard to conveying the disease to others.

Dr. W. C. Abbott, Chicago: I would like to ask Dr. Spalding whether there is a modicum of sense or experience in the claims of some physicians hat a person may be protected from smallpox by the ingestion of triturations of the virus.

Dr. S. M. Miller, Peoria: I would like to ask the doctor to give us his ideas of the treatment that his patients get in the Chicago Isolation Hospital.

Dr. Spalding, closing the discussion: In answer to Dr. Carter's question,—many years ago I asked the advice of the late Dr, N. S. Davis and Dr. H. A. Johnson what to do in that matter, and I have followed their suggestions ever since; and they apply to scarlet fever as well as smallpox. Nothing but the soles of my shoes come in contact with the home of the patient. I stand off at a distance to make the diagnosis; I have the attendants uncover the patient; I do not touch anything, not even the door knob as I enter the house, except when I have to vaccinate a person. I keep my hat on my head, and I air myself thoroughly after I get out, and, so far as I know, I have never carried the disease to any one. These are also the directions we give to our inspectors, and they have never carried the disease to others.

As to potentization, we meet the query frequently. A few doctors in Chicago give certificates stating that they have potentized a child; of course, such children are not admitted to school. I have vaccinated such thoroughly potentized persons, and I always got a good vaccination.

As to treatment, mild cases require no treatment. In severe cases, without entering into the treatment in detail, sustain the patient; do not

put on an antiseptic salve. The smallpox lesion is like vaccination. You want it to dry and scale off. By using a salve you prevent this drying and scaling off. After it begins to scale, you can resort to antiseptic salves with some benefit.

We have tried the Finsen treatment three times. At one time on over forty cases. It is worse than useless; it is positively harmful. It does not prevent pustulation in the least, nor does it prevent pitting on secondary fever.

COUNCILORS REPORT.

Freeport, Ill., April 25, 1905.

To the Honorable Chairman of the Council of the Illinois Medical Society:

During my service as councilor I have visited six out of the seven societies in my district.

Stephenson county has 44 physicians who are entitled to be licensed by State Board. Thirty-nine of these affiliate with the State Society and paid their dues for 1904.

The county society is in a very prosperous condition and holds its meetings quarterly at Freeport, which are well attended and usually have three or four papers, which are well prepared and discussed with great interest.

Dr. J. T. White, who is an osteopath and a graduate from Kirksville and licensed to practice from some Missouri Medical College has not been accepted by the society. However, he has a very verbose write up in our State Journal, which to the profession in this part of the State is considered as a joke. The publication of the article, which has been presumably copied from a newspaper relative to his expert testimony in a murder trial at New London, which is said to have consumed nearly one week's absence from home with several months time devoted in experimentation found in drowning guinea pigs, mice, etc., and that he received one hundred dollars for services at an autopsy. The appearance of the article in the Journal cannot be too strongly reprimanded.

The Fox River Medical Society (present officers: President, Dr. Frank H. Jenks, Aurora; Secretary, Dr. G. F. Allen, Aurora) which comprises McHenry and Kane counties, have twenty-five members who have paid their State dues. I certainly believe that another year we shall have at least 80 per cent of these who will affiliate with the State Society.

There seemed to have been a misunderstanding between this society and the State Society which led to a pretty strong opposition as well as personal feeling with some of the members, which I have a perfect right to think will shortly be forgotten.

The society is a strong one and has many very influential men, and I feel very happy that we are enabled to enroll this number for 1904. Under the efficient management of President F. H. Jenks and Secretary G. F. Allen, we shall have a much better showing another year.

Kane county, according to best statistics I could collect, has 153 physicians. McHenry 52. This shows a shamefully small number who affiliate with the State Society. I believe that in the year 1905 Kane county can be organized, though I have found considerable opposition, as many of these members are satisfied with, and do not wish to withdraw from this present association, viz: The Fox River Valley Medical Society.

Necrology—Dr. C. L. Smith, Aurora, Ill., April 15th, 1905.

The present Secretary has been very curt in his replies to me and apparently taken no interest in assisting me in obtaining information.

Ogle county has a paid membership of 18. I endeavored to have them call a meeting before the State meeting but owing to an epidemic of smallpox was prevented from doing so. There are 54 physicians in the county.

Necrology—W. F. Burns died at his home in Polo about the middle of April.

Carroll County Medical Society has 3? members, 13 of which have paid their State dues. I met with this society and read a paper and aroused considerable enthusiasm. I am sure Carroll will give us a better quota another year.

There has been considerable discord among the physicians in the county but I believe there is now a better understanding and in future things will sail more smoothly.

out of a membership of nearly ninety by

There will be a meeting at Savanna, Ill., May 9th. I shall be present and give them a paper and also endeavor to increase the State membership.

There has been no necrology.

DeKalb County Medical Society, which suspended itself last year for non-payment of dues, held a meeting April 14, 1905. The following officers were elected:

President, Dr. G. W. Nesbitt, Sycamore.

Vice President, Dr. J. M. Kaiser, Somanauk.

Secretary and Treasurer, Dr. C. H. Mordoff, Genoa.

I was present and read a paper and we got up considerable enthusiasm. Here as in Kane county there seemed to have been about the same misunderstanding, but out of a membership of about 35 members, 17 came up and paid their dues and four had paid up last year making 21 members. Here, too, I believe we will by another year have them practically all enrolled.

The county has 58 physicians.

Necrology—Dr. E. L. Mayo of De Kalb, died March 2, 1905, at his home in De Kalb.

The JoDaviess County Medical Society, under the tactful management of its officers, Dr. J. T. Stafford, (Dr. A. C. Czilbulka of Warren, President for 1905, and Dr. D. G. Smith of Elizabeth, Secretary) and especially Dr. D. G. Smith, its secretary, has 22 members which have paid their state dues. There are twenty-five physicians in the county which leaves but three that have not affiliated with the society.

Harmony exists and makes the work much pleasanter for all. Its meetings are held at various points in the county quarterly and the physicians in these several localities entertain the members royally, which no doubt has a wonderful influence on the welfare of the society. I have visited this society of which I am an honorary member several times and entertained them with a paper.

Necrology—Jeremiah N. Sharp of Stockton, Illinois.

Winnebago County Medical Society has a membership of ??, including Boone county, which has twenty-four physicians and Winnebago county eighty-one. Some of the Boone county physicians affiliate with Winnebago and some with De Kalb county.

At their January meeting and election of officers, the president elected is very unpopular and since his election they have not been able to get out a quorum.

The old secretary has just turned over the books to the new secretary and they contain neither head nor tail. I went down to Rockford to attend their last meeting, but no officers nor but four or five members present, so the meeting was not called to order. The secretary promised me to make a report to secretary before the State meeting and send State dues. Until another president is elected there will not be much doing in the Winnebago County Medical Society.

There are many conditions which require education of the physician, as he constantly complains of the laity when he alone is the one who needs training and systematic education to bring about harmony in the profession and this as a precept will gradually bring the laity into line.

Respectfully,

J. H. STEALY,

Councilor First District.

RUTLAND, ILL., May 15, 1905.

To the Council of the Illinois State Medical Society:

As councilor of the second district, the undersigned has the honor to herewith make annual report for the district named, which is composed of the ten counties of Lee, Whiteside, Bureau, La Salle, Putnam, Marshall, Woodford, Kendall, Grundy and Livingston.

At the last annual session of the State Society, six counties from the north side of this district were set off to another district, while four others were added on the east and south sides of its territory. Included in such addition was one county, viz: Woodford, then unorganized.

Following such change of territory, efforts were at once set on foot to reorganize the formerly existing, but long dormant, Woodford County Medical Society, an organiza-

tion with a very creditable history and of important influence in medical society work in the past. Such reorganization was successfully accomplished on August 24, 1904, and is now presided over by one of its early and capable members of former years. Such society is at this time in excellent working order under a charter issued under date of December 1st, of the same year.

This result completes the organization of the counties of the second district, and is a pleasure to be able to state that the component societies in such district are, at the present time, in a healthy and active condition, and each constitutes a live and vigorous medical organization.

There are now about 485 physicians located in the territory embraced in the district, about 245 of whom are already members of the component societies therein, leaving about 240 who are not thus affiliated. Doubtless a per cent of the latter number, by reason of advanced age, feeble health, change of profession, or for other causes, may have become incapacitated or rendered incapable of active membership. Therefore it may not be unsafe to state, that at least 60 per cent of all the eligible profession in the district are now affiliated with its component societies.

With the completion of the county society organizations, it is hoped that much more attention may hereafter be given to building up and enlarging, by increase of membership and the attraction of more professional interest therein, each of the local societies as it now exists.

Through the ever changing activities, as well as conditions, of physicians by professional retirement, removal or death, it becomes a very difficult matter to give exact statements as to numbers, which though correct today shall be reliable tomorrow; therefore we can only hope to very closely approximate the facts as they really exist, in our estimate of the number of physicians located in any district of our State.

The following, however, closely approaches a practically correct estimate for the second district:

Society	No. resident Physicians in County	No. members in Society
Lee County	53	21
Whiteside County	56	28
Bureau County	68	43
LaSalle County	117	48
Putnam County	7	6
Marshall County	26	12
Woodford County	28	9
Kendall County	17	13
Grundy County	28	Estimated 17
Livingston County	85	38
Total	485	245

It had earnestly been hoped that a much more complete report might have been prepared for this occasion, but the difficulty in securing proper data and the neglect or delay of response to inquiries, on the part of other parties to whom such had been made, has prevented its accomplishment.

Many deaths, and one at least by violence, have occurred throughout the district all mention of which, for the want of full reports from others is at this time omitted.

Respectfully submitted,

WM. O. ENSIGN, M. D.,
Councilor Second District.

The third councilor district comprising the counties of Cook, Lake, DuPage, Will and Kankakee has done very good work during the past year.

All of the counties with the exception of DuPage have county organizations, which are in a very flourishing condition. Du Page county, it will be remembered, was made a part of Cook county, and nearly all of the physicians in Du Page county are members of the Cook County Medical Society.

The Kankakee County Medical Society has held regular well attended meetings throughout the year.

Concerning the Lake County Medical Society, Dr. A. C. Haven, Secretary, writes as follows: "Lake County Medical Society is flourishing. We have very interesting bimonthly meetings at Waukegan. We have twenty-seven members. The register of the county shows forty-five members of the profession, half dozen of these are not practic-

ing. There have been two deaths during the year, Dr. D. B. Taylor, of Milburn, Ill., and Dr. L. C. Beau of Waukegan, both over seventy years of age. It is twenty-one years next June since our Society was organized, and Dr. J. M. G. Carter of Waukegan and myself are the two surviving organizers.

I think I can report that the interest in the Society has increased greatly the last year."

Dr. F. C. Fisher, Secretary of the Will County Medical Society, writes concerning the society as follows:

"The larger proportion of our Society members are residents of Joliet. It seems to be a difficult matter to convince the average practitioner outside of this city that his interests are identical with those of the Society.

Our Society numbers forty-five paid and active members at present, with some four or five others who will probably become members within a short time.

There are in this county some forty to forty-five physicians, who have not affiliated themselves with this Society nor with any other so far as I know. Of this number some twelve to fifteen are not eligible to membership in this Society.

This Society meets on the first Tuesday of each month. There have been no deaths among our members during the year passed."

The Cook County Medical Society has a total membership of 1673, of these 1461 are resident members; 104 life honoraries and emeritus, and 108 non-resident members.

Up to date there have been elected to membership 160. There have been nine resignations and five deaths. There are in the county about 800 physicians who are eligible to membership, but who have not yet come into the Society. The applications of a number of these are already in the hands of the membership committee, and steps are under way to get them all or as many of them as possible to come into the Society.

The branch Societies which are peculiar to the Cook county organization, are all doing excellent work both in a scientific way and in a way of recruiting new members to the general Society. M. L. HARRIS.

PEORIA, ILL., May 8, 1905.

Efforts in Springfield and other causes have conspired to prevent my reporting just when I intended.

Briefly, my councilor district is in fairly good shape. Have kept in close touch with work of, or personally visited, ten of the twelve counties. Schuyler and Henderson, I have been only indirectly informed respecting, but all are organized. I shall soon wake them up, however.

I cannot make accurate report as to membership, since the nominal and actual are in most locals so confused as to render separation impossible until last report is made to State Secretary. He is therefore the most reliable source of information on that score.

The principal fact that seriously presents itself for consideration is the confusion in most local societies as to whether members who will not pay State dues are to be considered or retained as members. In some of the counties, as Fulton for instance, the society is dominated by non-State members. Much error is therein manifest, and may readily be made a source of disruption. To me it seems a source of much menace. That is the chief point I have for your consideration in presenting matters to the House of Delegates. I would suggest the desirability of securing some decision for use of the councilors.

I have had many pleasant experiences, but there is the universal apathy characteristic of the profession when it comes to activity of attendance and participation in the work of the local organizations. As of yore, the few only are wide-awake to the necessities of the case.

Fraternally and sincerely,

O. B. WILL.

P. S. The average membership (nominal) in my district is about 50 per cent of the profession. Peoria, Knox, Rock Island, McDonough and Warren are above the average, and remainder below it.

As above stated, the greatest annoyance is in the existence of two classes of members, those attached to the State body and those not. In Fulton, as above mentioned, the

small proportion holding State membership are called "affiliating" members, but the "non-affiliating" dominate in the Society, and become irritated when it is hinted that they are not properly members at all in the aspect of State organization. The relationship of such needs to be better understood and defined, and the action of such societies respecting State Society interests be understood as questionable. O. B. W.

BLOOMINGTON, ILL., May 1, 1905.

Dr. W. O. Ensign, Chairman of the Council Illinois State Medical Society.

Dear Doctor:—

At the last annual meeting of the Illinois State Medical Society, an amendment of the by-laws makes it necessary for the councilor to make an annual report of his work and of the conditions of each county in his district, at the annual session of the Council. In compliance with these conditions, I therefore take pleasure in presenting the following report.

At the suggestion of the chairman, in a personal letter, it seemed convenient and quite proper to ascertain the following facts by some personal inquiry of the several societies in my district. Accordingly I took up correspondence with the Secretaries of the Societies and made inquiry as follows:

(1) The number of physicians who are members of your County Medical Society?

(2) The number of resident physicians in your county?

(3) The number of resident physicians in your county who are not members of your County Medical Society?

(4) The name, date, late residence, age and cause of death of any physicians who may have died during the year.

(5) The prosperity of your Society and new members admitted during the current year.

(6) Any notable or special meeting during the year, such as banquets or symposiums on special subjects of medicine and surgery, or any other items of unusual interest showing the progress of your county organization during the year.

To which the several counties replied as follows:

MCLEAN COUNTY MEDICAL SOCIETY.

R. A. Noble, Secretary.

(1) We have 88 members in good standing.

(2) There are 23 regulars; 18 Homeopath and 5 Eclectic.

(3) 58.

(4) Samuel L. Chapin, September 19, 1904, Saybrook. Murdered by being shot.

(5) The Society is in a prosperous condition. Lost six members by non-payment of dues, two by removal to other counties. We have added 10 new members and two members by transfer from other counties. Total new members during the year, 12.

(6) Regular interesting program of year's work.

SANGAMON COUNTY MEDICAL SOCIETY.

C. R. Spicer, Secretary.

(1) Now have 76 members in good standing. Of these 6 are not residents of this county.

(2) There are a total of 150 physicians in county.

(3) Of these 128 are eligible to membership, 70 are members, and of the other 80 many are too old to practice and others are indifferent. The other not accounted for are irregulars.

(4) The only death in the profession in the county during the past year was that of Dr. Chas. Kerr of Springfield. He had heart lesion; besides this loss was one removal.

(5) We have gained in new members, 8.

(6) We have had one symposium on tuberculosis.

LOGAN COUNTY MEDICAL SOCIETY.

H. S. Oyler, Secretary.

(1) We have 22 members in good standing.

(2) We have about 62 physicians in the county.

(3) Physicians not members in the county, 40.

(4) None reported.

(5) Eight members added during 1904.

(6) No meetings except the regular meetings.

DEWITT COUNTY MEDICAL SOCIETY.

A. E. Campbell, Secretary.

(1) 24 members in good standing.

(2) 29 resident physicians.

(3) 5 physicians not members of the Society.

(4) No deaths to report.

(5) Condition of the Society, fair. New constitution adopted.

(6) No special meetings.

MASON COUNTY MEDICAL SOCIETY.

H. H. Hanley, Secretary.

(1) 16 members at present time.

(2) About 26 at present.

(3) About 10.

(4) Dr. P. L. Diffenbacher, Havana, Ill., January 29, 1905. Cause of death uremic cystitis and hypertrophied prostate.

Dr. A. M. Bird, Mason City, Ill., about January 20, 1905. Of apoplexy.

(5) At present time society is in good condition though it is rather difficult to get a good attendance at the meetings which are quarterly.

(6) No meetings of special interest.

IROQUOIS AND FORD COUNTY SOCIETY.

Dr. C. O. Burgess, Secretary.

Reports 44 members in the Society, 22 of whom have paid dues and 22 not having paid dues. Treasury contains $50.50.

Society holds two meetings a year. Annual meeting on January 1. We consider the Society in a prosperous condition.

Dr. S. M. Wiley, President; S. D. Culbertson, Delegate. Also furnishes report.

At present date. (May 1.) I have been unable to get a report from the following counties: Menard and Tazewell.

From the foregoing reports that have been received it will be seen that there is quite a little interest manifested in the fifth district, in the interest of medical organization and all medical society work. During the succeeding year hope to be able to present a report showing continued progress and interest in county organization and professional advancement, in view of which this report is respectfully submitted.

J. WHITEFIELD SMITH,
Councilor of Fifth District.

JACKSONVILLE, ILL., May 8, 1905.

W. O. Ensign, Chairman and Members of the Council of the Illinois State Medical Society:

As councilor from the sixth district, comprising the counties of Adams, Brown, Calhoun, Cass, Greene, Jersey, Madison, Macoupin, Morgan, Pike and Scott, I would make the following report:

Every county in the district has a society which is affiliated with our State Society, each one of these county societies has held one or more regular meetings during the year and I have, as councilor, visited each society at least once, and I find that all seem to be in good condition; although as yet their membership is not as extensive as it should be, nor is the attendance as large in proportion to the membership as we would like to see it. However, if the next five years shows as much improvement as the last we believe conditions in the sixth district will be eminently satisfactory.

I had hoped to be able to present at this meeting a complete index of the physicians of the district, but it has taken considerable time to explain to the secretaries the purposes of the index and to secure their active co-operation. For most of the counties the index is now complete. One county has done nothing, and in two counties the index is only complete as to the membership of the Society. I certainly think before the end of another year this matter can be fully completed.

During the present year we have re-organized the Western Illinois Medical and Surgical Association into a District Society for the Sixth District. A meeting for re-organization was held in Quincy in October, at which time we were entertained by the profession of Adams county. The first regular meeting for re-organization was held in Jacksonville, Morgan county, on May 5th,

at which about forty physicians from the district were present. Permanent officers were elected.

CARL E. BLACK.

Dr. W. O. Ensign, Rutland, Ill.

Dear Doctor: This you may accept as a brief and informal report of the affairs of the seventh councilor district.

All counties in the district have active, working societies organized under and component with the State Society, with the exception of Moultrie county. I visited Moultrie county in March, interviewed a number of the leading physicians, and had hoped, as the result of that visit, to see the Moultrie County Society affiliated with the State organization before the annual meeting. However, Dr. B. F. McMenamy, a strong organization man, upon whom, more than any one else, depended the completion of the organization became sick and died a few days ago. I have the promise of Dr. A. D. Miller of Sullivan that an organization will be speedily effected.

Nothing of especial interest has arisen in the district during the year.

Fraternally yours,

E. E. FYKE.

CHAMPAIGN, ILL., May 15, 1904.

To the Council of the Illinois State Medical Society:

Gentlemen: I hereby submit my annual report as councilor of the eighth councilor district which comprises the counties of Champaign, Vermilion, Douglas, Edgar, Coles, Cumberland, Clark, Jasper, Crawford, Richland and Lawrence. Every county above named has an active medical organization and reports for the most part are quite favorable considering conditions two years since, they may be regarded as highly satisfactory but they show the need of a great deal of work still in the way of organization. Interest in medical society and medical discussion being in most cases fairly good with only about twenty-five per cent of the members participating and about fifty per cent still out of the county organizations.

Champaign county shows: Physicians affiliating with the State Society, 51.

Number added during past year, 7.

Number of meetings, 7.

Average attendance of meetings, 21.

Deaths, none.

Removals, none.

The County Medical Society at the time of making this report is involved in controversy with W. H. and Anna L. Zorger over the right of title to the name "Champaign County Medical Society," the above named parties having incorporated a county medical society under that name, and forbid all others from using the same. Whether the original county medical society had prior rights owing to its incorporation by the Illinois State Medical Society will be left for your honorable body to indicate.

Clark county: Number of pysicians affiliated with the State Society, 12.

Number added during the past year, 2.

Number of meetings, 4.

Average attendance, interest fair, 8.

Deaths, 4. Dr. S. T. Williams, Casey; Dr. J. H. Parcel, Westfield; Dr. James Madison, Marshall; Dr. C. H. Felts, Clark Center.

Removals, Drs. H. W. and P. P. Haslet.

Coles county: Number of members affiffiliating with State Society, 31.

Added during past year, 10.

Number of meetings, 6.

Average attendance, 12.

Interest, good.

Deaths or removals, none.

Crawford county: Number of members in affiliation with State Society, 23.

Numbers of members added during past year, 3.

Number of meetings, 6.

Average attendance, 14.

Interest in work, fair.

One death, one removal.

Cumberland county: Number of physicians affiliated with State Society, 11.

Number of physicians added during the year, 8.
Number of meetings, 4.
Average attendance, 7.
Interest in work, fair.
No deaths, no removals.

Douglas county: Number of paid up members, 7.
Number added to State Society during the year, none.
Average attendance, 6.
No deaths.
One removal.

Edgar county: Number of physicians affiliating with State Society, 21.
Number of physicians added during past year, 2.
Average attendance, 20.
Number of meetings, 4.
No removals, no deaths.

Jasper county: Number of physicians affiliating with State Society, 19.
Number of physicians added during past year, none.
Interest of members, poor.
No deaths, no removals.

Lawrence county: Number of physicians affiliating with State Society, 22.
Number of physicians added during past year, none.
Average attendance, 15.
Interest of members, good.
Number of meetings, 4.
No deaths.
One removal.

Richland county: No report.

Vermilion county: Number of physicians affiliating with State Society, 67.
Number of physicians added during past year, 9.
Number of meetings, 10.
Average attendance, 15.
One death.
Removals, not noted.

Dr. E. W. Johnston died in June, 1904, of sarcoma of the parotid gland after a long and painful illness.

When it is remembered that only four counties in this district were organized two years ago it will be seen that much has already been accomplished, but interest in scientific work is not up to requirements and the number taking part in society work is in some instances entirely too small. Much of the credit of organizing and maintaining county societies in the southern end of the district is due to the efforts of Dr. C. Barlow, of Robinson.

Respectfully submitted,
W. K. NEWCOMB,
Councilor Eighth District.

CARBONDALE, ILL., May 2, 1905.

Dr. W. O. Ensign, Chairman, Rutland, Ill.

Dear doctor: I submit herewith a partial report for the ninth district. There are 7 out of the 23 counties comprising the district that have not reported so far. The report is therefore unsatisfactory, but is the best I can make at this time and will give you a fair idea of the condition of this district.

Yours very truly,
J. T. MCANALLY.

COUNTY.	Membership.	No. Physicians in County.	No. meetings during year.	Condition of Society.
Union	15	44	None	Very dormant
Franklin	17	23	4	Good
Perry	9	23	None	Poor
Randolph	21	37	None	No interest
Alexander	10	22	4	Good
Williamson	46	35	12	Good
Hamilton	15	25	4	Good
Edwards	9	14	4	Good
Jefferson	26	36	10	Good
Wayne	13	35	4	Good
Jackson	20	50	4	Good
Monroe	12	19	2	Good
St. Clair	40	150	6	Good
White	13	39	1	Sluggish
Pulaski	16	18	4	Good
Massac	15 (estim't'd)	30	No report	
Pope	10 "	20	" "	
Gallatin	10 "	17	" "	
Saline	18 "	45	" "	
Washington	16 "	33	" "	
Wabash	18 "	22	" "	
Johnson	15 "	30	" "	
Hardin	.....	14	Not organized	

The following counties have been organized during the year: Jefferson and Monroe. Hardin county has no organization. I at-

tempted to hold a meeting there but could get no date fixed.

Have visited officially and attended society meetings in Wabash, Wayne, Jefferson, Monroe and Jackson counties. Have addressed three or more official communications to the secretaries of the various county societies relative to society work and better organization.

The following have died during the year: R. S. Peyton, Pinckneyville, 69 years; cause of death, cancer.

John McMenomy Walsh, 56 years; Pthisis Pulmo.

Wm. Hayton, Cottage Home, 90 years.

W. F. Hall, McLeansboro, 52 years; Gall Stones.

D. F. Whited, Dahlgren; Diabetes.

A. R. Silvey, Murphysboro, 45 years; Peritonitis.

R. R. Lacey, Carbondale, 65 years; Pneumonia.

A. N. Stout, Ava; Pneumonia.

The following members from Illinois attended the recent meeting of the American Medical Association at Portland:

Abbott, W. C., Chicago,
Adams, A. L., Jacksonville,
Alguire, A., Belvidere,
Alguire, A. B. McC., Belvidere,
Andrews, F. T., Chicago,
Bacon, C. S., Chicago,
Baldwin, A. E., Chicago,
Baum, W. L., Chicago,
Berry, R. D., Springfield,
Billings, F., Chicago,
Boshell, H. N., Melvin,
Bourland, I. N., Equality,
Bowen, C. F., Chicago,
Bowles, M. K., Joliet,
Brennecke, H. A., Aurora,
Brobst, C. H., Peoria,
Brower, D. R., Chicago,
Brown, E. V. L., Chicago,
Burlingame, D. E., Elgin,
Butler, W. J., Chicago,
Buxton, W. E., Samsville,
Cargill, C. W., Mason City,
Carson, G., Chatsworth,
Carter, J. M. G., Waukegan,
Coe, T. D., Keithsburg,
Cook, G. F., Mason City,
Cook, J. C., Chicago,
Cotton, A. C., Chicago,
Crocker, F. S., Chicago,
Davis, E. V., Chicago,
Dixon, W., Chicago,
Ehrmann, F. J. E., Chicago,
Eldred, C. C., Joliet,
Elliott, F. M., Aurora,
Enright, C., Scales Mound,
Fletcher, J. R., Winnetka,
Foley, J. C., Waukegan.
Frank, J., Chicago,
Freer, O. T., Chicago,
Fringer, W. R., Rockford,
Garrison, H. E., Dixon,
Gilmore, R. T., Chicago,
Goldspohn, A., Chicago,
Graham, D. W., Chicago,
Green, F. R., Chicago,
Green, G. W., Chicago,
Green, R. L., Peoria,
Gregory, L. L., Chicago,
Guthrie, W. E., Bloomington,
Hairgrove, J. W., Jacksonville,
Halberg, C. S. N., Chicago,
Hall, W. S., Chicago,
Harris, M. L., Chicago,
Harsha, W. M., Chicago,
Hartung, H., Chicago,
Harvey, L. J., Griggsville,
Horrell, C. B., Galesburg,
Hunt, C. C., Dixon,
Jump, E. W., Plainfield,
Kemp, Geo. T., Champaign,
Kreider, G. N., Springfield,
Latham, V. A., Chicago,
Lemen, H. R., Alton,
Lewis, D., Chicago,
Lichty, D., Rockford,
Linn, E. C., Monmouth,
MacDowell, G. A., Chicago,
Maclay, A. I., Delavan,
Main, R. H., Barry,
Maley, W. H., Galesburg,
Martin, W. B., Sherrard,
Matheny, R. C., Galesburg,
McArthur, L. L., Chicago,
Meserve, A. G., Robinson,
Michael, M., Chicago,
Miller, A. M., Danville,
Miller, J. S., Chicago,
Milnamow, J. T., Chicago,
Mitchell, E. L., Monmouth,
Mix, C. L., Chicago,
Montgomery, L. H., Chicago,
Murphy, E. S., Dixon,
Neville, F. A., Meredosia,
Nance, W. O., Chicago,
Ochsner, A. J., Chicago,
Oyen, A. B., Chicago,
Pearce, B., Waukegan,
Pelton, O. L., Elgin,
Percy, J. F., Galesburg,
Polk, J. L., Champaign,
Pusey, W. A., Chicago,
Rafferty, T. N., Robinson,
Rawlings, I. D., Chicago,
Riese, B. L., Chicago,
Riley, C. M., Alton,
Rowe, M., Redmon,
Ruediger, G. F., Chicago,
Sala, St. E. M., Rock Island,
Schwachan, W. B., Chicago,
Smith, D. G., Elizabeth,
Simmons, G. H., Chicago,
Stanton, S. C., Chicago,
Steele, D. A. K., Chicago,
Stremmel, S. C., Macomb,
Strohecker, S. M., Chicago,
Sutton, E. M., Peoria,
Sutton, J. E., Canton,
Swan, C. F., Chicago,
Talbot, E. S., Chicago,
Taylor, J. L., Libertyille,
Taylor, L. C., Springfield,
Thometz, J. J., Chicago,
True, C., Kankakee,
Tuthill, J., Leroy,
Urban, B. F., Kankakee,
Washburn, W. C., Kewanee,
Waugh, W. F., Chicago,
Weidner, M. R., Dolton,
Wells, E. F., Chicago,
Williams, T. W., Casey,
Wright, C. E., Scales Mound,
Zapffe, F. C., Chicago.

The Illinois Medical Journal.

The Official Organ of the State Medical Society.

AUGUST, 1905.

NEXT ANNUAL SESSION, SPRINGFIELD, MAY 17, 18, 19, 1906.

OFFICERS:

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FIRST VICE PRESIDENT—W. K. NEWCOMB. Champaign.
SECOND VICE PRESIDENT,—M S. MARCY, Peoria.
SECRETARY—EDMUND W. WEIS, Ottawa, Ex-officio clerk of council.
TREASURER—EVERETT J. BROWN, Decatur.
EDITOR—GEORGE N. KREIDER, Springfield.
ASSISTANT EDITOR AND BUSINESS MANAGER—F. C. GREEN, 63rd and Lexington Ave., Chicago.

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Practice of Medicine, Medical Specialties, Materia Medica, Therapeutics, Etiology, Pathology, Hygiene, State Medicine and Medical Jurisprudence.

J. H. Stowell ..... Chairman
Columbus Memorial Building, Chicago.
H. H. Whitten ..... Secretary
Peoria.

SECTION TWO.

Surgery, Surgical Specialties, and Obstetrics.

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Quincy.
S. C. Plummer ..... Secretary
34 Washington St., Chicago.

Committee on Prevention of Tuberculosis.

J. W. Pettit, Ottawa.
C. L. Mix, Chicago.
J. F. Percy, Galesburg.

Committee on Public Policy and Legislation.

Frank Billings, Chicago.
Carl E. Black, Jacksonville.
J. W. Pettit, Ottawa.
The Pres. and Sec'y. Ex-Officio.

Committee on Scientific Work.

J. H. Stowel.
J. R. Christie.
The Pres. and Sec'y. Ex-Officio.

The figures before the names of the Councilors refer to the Councilor Districts.

The Council.

(1) J. H. Stealy, Freeport.
(2) W. O. Ensign, Rutland, Chairman.
(3) M. L. Harris, Chicago.
(4) O. B. Will, Peoria.
(5) J. Whitefield Smith, Bloomington.
(6) C. E. Black, Jacksonville.
(7) E. E. Fyke, Centralia.
(8) C. Barlow, Robinson.
(9) J. T. McAnally, Carbondale.

THE PORTLAND MEETING.

More than 1,700 members of the American Medical Association assembled at Portland, Oregon, last month and took part in the scientific program and enjoyed the bountiful entertainments provided by the profession of the North West coast. Unusually low rates were given by the railways because of the exposition and this together with the side trips to well-known resorts, which could be made before and after the meeting, undoubtedly served to increase the attendance. Of these resorts, their advantages and disadvantages we will speak of in a future issue. Our professional brethren of Portland undertook a very large contract when they invited the National body to their beautiful city and the only wonder is that they succeeded with the details as well as they did. If we mention some of the unfortunate features of the session we do it in no spirit of criticism but merely to draw some lessons for the future. * * * * As usual the attempt to house the exhibitors and the general meeting in the same building was a dismal failure. The first general session, which had to be abandoned, was the only one held in the armory. The others were held

in the beautiful Presbyterian church but the unfortunate results of the first meeting were seen in the meagre attendance at the remaining sessions. This notwithstanding the addresses presented were of a high order and deserving of greater appreciation. The necessity for having the management of the annual meetings in the hands of persons accustomed to handle the details had become so apparent not only at this but at other meetings, that the house of delegates voted to change the method and in future we may reasonably expect to see a different condition of things. We surely will not see at any future meeting, a prominent place given to that medical journal which in no way represents the best elements of the medical profession, nor to those proprietary remedies which are denied admission to the armamentarium of self respecting practitioners. Fortunately the number of exhibitors at this meeting was small and most of them were respectable * * * * This brings the question of advertising in general and here again a long step was taken by the representatives of the profession. Not as firm a step as many would like to see taken but the spirit of reform was there and shows that education of the profession is going on which in a few years will result in casting out from all respectable journals the "yellow" ads which have so long found a place in them. In this great work nothing has had so great an influence as the stand taken by the various official State Journals which have with very few exceptions taken an unassailable position of opposition to all such preparations as would not bear thorough examination not only of their composition but as to the manner in which they are put on the market. This subject was appropriately brought to the front at the meeting by the action of the Missouri State Medical Association. In this State the largest and most flourishing nostrum factories are located and many of the profession have been disgracefully implicated in exploiting proprietaries. The influence of the California society was prominent in this matter and Dr. Wells of Chicago also presented resolutions from the section on Practice of Medicine. * * * * Another important action of the house was the approval of the project to publish a reliable medical directory. Opposition to this developed from the home city of a firm now publishing a directory but fortunately the delegates endorsed the correct plan. We have personally several times called the attention of directory publishers to the great mistake they were making in inserting quack advertisements in their columns but all to no effect. The action of the delegates at this meeting was the result of this mistaken policy. * * * * * The Senn medal was awarded to Dr. J. L. Yates, of 700 Sedgwick street, Chicago, his article being entitled "An Experimental Study of the Local Effects of Peritoneal Drainage."

* * *

Dr. Geo. H. Simmons was given well deserved praise for his conduct of the Journal and his services as Secretary of the Association and was reelected without opposition.

* * *

A high compliment was given to Dr. Wm. J. Mayo of Rochester, when he was elected President of the Association by acclamation.

* * *

A large number attended from Illinois. Their names will be found on page 180.

* * *

Dr. J. B. Murphy did not attend because of Brachial Neuralgia. He is at Glenwood Springs, Colorado.

* * *

Dr. Frank Andrews suffered painful injuries to both ankles while doing the "trail" at the Lewis & Clark Exposition.

* * *

In our next issue we will have something to say on the health and pleasure resorts of the West.

THE YELLOW FEVER SITUATION.

For the first time since 1897, an epidemic of yellow fever prevails in New Orleans and neighboring ports upon the Gulf Coast, and threatens the country lying to the north.

The usual excitement exists and shot-gun quarantines have been instituted between the various communities of the Southern States and inspections of the railway and steamboat passengers have been instituted at Cairo, Illinois, by the State Board of Health.

To all appearances the results of the scientific work done in Cuba and Mexico have been forgotten and the old idea of the contagiousness of yellow fever has been reinstated with all its resulting hardships.

If the mosquito theory of the transmission of yellow fever is true all quarantine and detention of infected persons elsewhere than in properly situated and screened hospitals is a form of cruelty not creditable to twentieth century civilization. The frenzy of officials of various States who are resorting to discarded methods of dealing with present conditions shows that they do not keep in touch with modern thought. Besides their action however well intentioned but mistaken is disastrous to the business interests of the country.

We shall watch with great interest the developments of this disease and sincerely trust that the order of President Roosevelt turning over the whole management of the epidemic in the South to the Marine Hospital Corps will result in its speedy extinction. We believe it will as the work done by the corps is in the proper line that is of destroying the dangerous mosquito and screening the yellow fever patients themselves.

THE NEW PHARMACOPOEIA.

The J. B. Lippincott Co. of Philadelphia have just issued the new United States Pharmacopoeia. Among the alterations which should be known to all practitioners, we call attention to the changes in strength of the following preparations:

The strength of Tincture of Aconite has been reduced from 35 per cent to 10 per cent, and that of Tincture of Veratrum from 40 per cent to 10 per cent. The strength of Tincture of Strophanthus has been increased from 5 per cent to 10 per cent.

These changes have been made in order to cornform to the standards adopted by the International Conference on Potent Remedies held at Brussels in September, 1902, the object being to make uniform the strength of potent remedies in all parts of the world.

A large number of synthetic remedies have been admitted, not under their trade or commercial names, by which many are well known to the profession, but, in most cases, under names approximating their true chemical names. Thus Phenacetin is admitted as Acetphenetidium, a name which shows at once that this substance belongs to the great group of phenetidin compounds.

Aristol is admitted as Thymolis Iodidum, showing that it is an iodine compound of thymol.

3. Additions.—There are 117 additions in the Eighth Decennial Revision of the U. S. Pharmacopoeia; among these are representatives of all classes of drugs. There is, for instance, a larger number of synthetic remedies than ever before. The principles involved in the pharmacopoeial terminology of these have already been discussed. The active principles of a number of drugs have been admitted; this permits of more accurate dosage and their use obviates the necessity of administering inert and often undesirable constitutents of the crude drug. New salts of well-known drugs have been admitted on account of their greater stability or solubility. Inasmuch as the discovery of diphtheria antitoxin is perhaps the greatest achievement in therapeutics in the last quarter of a century, the Serun Antidiphthericum is a very notable addition to the Pharmacopoeia; not only is this substance made official but a definite American standard for it has been fixed.

(To be continued next month.)

Correspondence.

WISHES PLAIN LANGUAGE.

Editor Illinois Medical Journal:

Please permit me, as a member and reader of this journal, to protest against the increasing tendency of the members of our profession to coin new words. I believe in progress, but to operate a patient and vibrate him and to give him claudication where a little limping exists, I should call it pseudo-progress. Look over the proceedings of the various medical societies reported in the Journal and one sees these evidences staring him in the face. Then we also have the custom of giving some medical man's name to an operation or procedure, and then in talking about it, taking it for granted that everyone who hears, or reads, is just as familiar with every step as the speaker, a conclusion which is far from true. Are the gentlemen who live and practice in Chicago so driven that they cannot pause long enough to describe to us what they have to say in understandable English? If so, would it not be as well to strike a slower pace? If we are to maintain the honor and dignity of our profession, let us not appear as illiterates who are at the same time trying to add all sorts of words to our mother tongue. The desire to coin new names for diseases seems to go hand in hand with a growing inability to use the English language in a manner that will impress your ideas upon others. To illustrate this, you have only to read several accounts of new and rather intricate operations by various medical men to see how hopeless it often is to follow them understandingly.

Yours fraternally,

S. J. BUMSTEAD.

Decatur, July 7, 1905.

COMMENDS PETTIT'S CAMP.

Edgewater, Colo., July 22, 1905.

The Illinois Medical Journal:

DEAR SIRS: I wish to thank you for the carefulness in printing my article in the February, 1905, number. I believe I am in arrears in my account with you, but have not received a bill. Inclosed find check for $2.00, which I am sure I owe you. Would you wish an article on the disadvantages of Colorado as a place for consumptives? It seems to me, and is driven into me daily, that the profession at large should know something of the disadvantages as well as the advantages when taking the matter of sending a patient here into consideration.

I recently visited Dr. Pettit's camp at Ottawa. He is certainly doing a fine work, and it should make an appeal to the people of Illinois that could not be restrained. That tuberculosis can be treated in Illinois with equal results to that attained in Colorado is no doubt whatever in my mind.

I am, yours sincerely,

W. H. WATTERSON, M. D.

TRUTH TOLD BY BAD SPELLING.

A gentleman making an application for insurance, named as beneficiary a lady not related to him. The insurance company asked him to give his reasons for so doing, and he wrote them as follows: "I intend marring her in the near future."

JOHN ROSS, M. D.

Pontiac, Ill., July 28, 1905.

News Items.

Dr. G. W. Fuller of Palestine has removed to Paris.

Dr. I. N. Smith of Auburn, has removed to Toluca.

Dr. A. L. Volpar has removed from Alexander to Homer.

Dr. W. R. Baker has removed from Urbana to Homer.

Dr. R. H. Brown of Huey has removed to Centralia.

Dr. Waltman has located at Kampsville, Calhoun county.

Dr. C. F. Randolph of Danvers has removed to Bloomington.

Dr. W. A. Skul of Belleview has sold his practice to a Dr. Berry.

Dr. E. J. Burch of Cerro Gordo has removed to 516½ Hampshire street, Quincy.

Dr. J. S. Kenelly of Easton suffered a broken leg from a runaway accident July 27.

Dr. A. E. Williams of Hospital has removed to 322 19th street, Rock Island.

Dr. H. W. Long has removed from Newton to 517 Veronica avenue, East St. Louis.

Dr. Marie Jean Stees has removed from Freeport to Room 801, Savings Bank building, Chicago.

Dr. A. P. Ohlmacher has been appointed Director of the Biologic Laboratories of Frederick Stearns & Co., Detroit, Mich., and has entered upon the active duties of the position.

Dr. L. J. Pritzker has returned from a year's stay in Europe to his residence, 682 N. Hoyne avenue, Chicago. During his absence the Doctor attended clinics in Berlin, Vienna, Buda Pest and Dresden.

By an error it was made to appear that the paper of Dr. Clarence Webster, printed in our July issue, was read at the meeting of the State Society at Rock Island. Dr. Webster we are informed, did not attend the annual meeting.

Dr. J. Harvey Banks of Lincoln, was recently sued for divorce by his fourth wife, Mrs. Maud Banks, who is said to be pretty, twenty-one years of age and twenty years the junior of her husband. The doctor is said to be considerably deformed, having lost both legs above the knees through a railway accident.

Marriages and Deaths.

Thomas M. Aderhold, M. D., Ziegler, Ill., to Miss Mae Sinicka of Chicago, at DuQuoin, Ill., June 21.

Robert G. Allen, M. D., Washington, Ill., to Miss Anna Forward of Maryland, June 26.

Bruce Taylor Best, M. D., Arlington Heights, Ill., to Miss Edith Genevieve Stevens of Jefferson, Wis., June 14.

John A. Collins, M. D., East St. Louis, Ill., to Miss Mollie B. Marshall of Lebanon, Ill., June 21.

Samuel A. Crabtree, M. D., to Miss Emma Alice Reynolds, both of Tolono, Ill., July 26.

B. Barret Griffith, M. D., Springfield, Ill., to Miss Sarah Adelia Giddings of Colorado Springs, Colo., June 28.

Harry G. Hardt, M. D., Hospital, Ill., to Miss Beilfus of Chicago, June 21.

William Nelson MacChesney, M. D., Chicago Heights, Ill., to Miss Harriet A. Darnell of Storm Lake, Iowa, June 21.

William H. Reedy, M. D., Towanda, Ill., to Miss Nellie Fincham of Bloomington, Ill., June 29.

John F. Sloan, M. D., to Miss Sarah McDonald, both of Brimfield, Ill., July 24.

Alvin B. Snyder, M. D., to Miss Elizabeth Sinclair, both of Chicago, June 26.

Duncan Frazier Stewart, M. D., Neponset, Ill., to Miss Adelaide Victoria McIntire, at Chicago, July 6.

George H. Willis, M. D., to Miss Ethel B. Fahr, both of Winslow, Ill., June 14.

Charles McCaw Wood, M. D., to Miss Mary Stroud Swan, both of Maroa, Ill., June 28.

DEATHS.

James C. Bristow, M. D. University of Louisville Medical Department, 1872, died at his home in Wayne City, Ill., July 16, aged 81.

Fred Brittin, M. D., died at the residence of his parents, Mr. and Mrs. F. E. Brittin, 1108 S. Second street, Springfield, at 11:30 a. m., Monday, July 31, 1905, aged 28 years.

D. C. Dunn, M. D., Louisville Medical College, 1872, a member of the local board of education, and justice of the peace, died suddenly at his home in O'Fallon, Ill., July 23, from cerebral hemorrhage, aged 61.

Edwin Stanton, Fowler, M. D., University of the City of New York, formerly of Springfield, Ill., died at the North Shore Health Resort, Winnetka, Ill., July 11, aged 77.

Benjamin Franklin Gardner, M. D., Cincinnati, 1860, surgeon during the Civil War, died at his home in Atlanta, Ill., July 21, from senile debility, aged 87.

James F. Gary, M. D., St. Louis, 1878, died at his home in Delhi, Ill., June 19, after a lingering illness, aged 55.

Henry Hatch, M. D., Louisville Medical College, 1872, of Quincy, Ill., a member of the American Medical Association, Illinois State Medical Society, Adams County Medical Society, International Association of Railway Surgeons, Mississippi Valley Medical Association; fellow of the American Academy of Railway Surgeons, president Tri-State Medical Society in 1901, surgeon to the Burlington system; consulting surgeon to Blessing Hospital, Quincy; consulting physician to Woodland land Home for Orphans and Friendless and Anna Brown Home for the Aged; from 1882 to 1887 professor of principles and practice of medicine in the medical department of Chaddock College, and president of the school board of Griggsville in 1875 and 1876, one of the most prominent practitioners of western Illinois, died at Blessing Hospital, Quincy, from pernicious anemia, July 24, after an illness of six months, aged 57.

Charles H. Hitchcock, M. D., Cincinnati, 1857, for many years a prominent practitioner of Aurora, Ill., died at his home in that city, June 28, after an extended illness, aged 74.

Selina H. Miller, M. D., Missouri, 1886, died at her home in Lincoln, Ill., June 22, aged 73.

T. J. Mitchell, M. D., of Bement, died August 3, of dropsy, aged 82. He is survived by his wife.

Eugene B. Perry, M. D., Rush Medical College, Chicago, 1880, died at his home in Melvin, Ill., June 22, from uremia, after a short illness, aged 61.

David Wilkins, M. D., University of Michigan Department of Medicine and Surgery, Ann Arbor, 1853, surgeon of the One Hundred and Thirtieth Illinois Volunteer Infantry, during the Civil War, for 51 years a resident of Greenville, Ill., died at his home in that city from cerebral hemorrhage, July 23, after an illness of two months, aged 76.

County and District Societies.

ADAMS COUNTY MEDICAL SOCIETY.

Regular meetings held in Quincy the second Monday of each month at 2 p. m. Membership 70.

Officers.

President.....Jno. A. Koch, Quincy
First Vice Pres.....J. M. Grimes, Camp Point
Second Vice Pres.....H. Hart, Quincy
Secretary.....Geo. E. Rosenthal, Quincy
Treasurer.....R. J. Christie, Quincy
Censors—Jos. Robbins, L. B. Ashton, E. B. Montgomery, Quincy.

Delegate to the State Society, L. H. A. Nickerson, Quincy.

Alternate to the State Society, R. J. Christie, Jr., Quincy.

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The Society met at Quincy, Ill., July 10th, with President Koch in the chair.

Those present were: Drs. Bates, Christie, Gilliland, Grimes, Hart, Koch, Knox, Montgomery, Nickerson, Pfeiffer, Robbins, Rise, Rosenthal, Williams, J. G., and Zimmerman.

Dr. Zimmerman reported a case of "Pan-Hysterectomy and Appendectomy for a Right Sided Pyosalpinx and Chronic Appendicitis," as follows:

Mrs. P., age 28, married at 18 and has given birth to two children. Up to 23 years of age menstruation has always been regular and free from pain. First child was born during patients twenty-third year. No trouble connected with or followed this labor. From her 23rd to 25th year she had three miscarriages. Does not know cause of same. Following the last miscarriage the patient was anaesthetized, but does not know what treatment she received. Shortly after this treatment she became pregnant again and her last child was born when patient was 26 years of age. Was in labor 62 hours, but no instruments were used to deliver the child. In bed 15 days following labor, but no fever. When menstruation came on again it was regular, but profuse.

Present Illness: The history I received from the patient about her present illness was a very poor one, but it was the best I could obtain from her. She denies any gonorrheal attack, but states that last winter she began to have a muco-purulent discharge from the vagina, which however, was not very profuse. Menstruation from now on was painful, lost more blood than usual. From about the beginning of April up to the time she came into my care on May 15th, she has had numerous severe attacks of pain in the right inguinal and hypogastric region, accompanied by fever and vomiting. Was practically confined to her bed all this time and lost about twenty pounds in weight according to her statement.

General Examination: Appearance sallow and exhausted. Heart, lungs and urine normal. Temperature 100, pulse rate 110. Vaginal examination—considerable quantity of purulent discharge from the uterus. Difficult to get cervix into the speculum, since it was drawn towards the right side and firmly fixed, this condition being due to an old right sided cervical laceration extending up into the vaginal vault. The cervix was eroded and bled freely when handled, this condition probably being due to the quantity of discharge constantly flowing over it. On bimanual examination the uterus was found to be firmly fixed in the pelvis and it was impossible to move it in any direction. The uterus was drawn over towards the right side of the pelvis and the space between the right horn of the uterus and the lateral wall of the pelvis was filled with a large firm mass, very painful on manipulation. The left tube could not be felt.

Nothing further could be made out of rectal examination. The patient's temperature from the date of entrance into the hospital May 15th until the date of operation, May 19th, ranged from 99½ to 100 degrees and the pulse rate from 108 to 115.

Taking into consideration pulse rate and temperature and the purulent discharge from the uterus the large mass in the region of the right tube and the pain and tenderness over the same, a diagnosis of Pyosalpinx (specific) was made and on account of the attacks of vomiting and the frequent association of appendicitis in cases of this kind, a diagnosis of appendicitis or intestinal kinking from intestinal adhesions was made.

The cervix was considered suspicious of malignancy, although the condition of erosion was thought probably to be due to the amount of discharge flowing over it.

Dr. Montgomery saw the patient the next day following my examination and came to the same conclusions and assisted me in the operation. A complete hysterectomy was advised and the abdominal route chosen on account of a possible appendicitis and the intestinal adhesions which I expected to encounter, and it is best to deal with these under the eye as much as possible.

On May the 19th the abdomen was opened and the patient placed in the Trendellenberg position. The right tube was found enlarged thickened and distended with pus. It was firmly bound down to the intestines and the appendix infiltrated and rigid was also fixed to the tube. Appendix was separated and removed, and then the uterus and tubes, etc., were made free and a complete hysterectomy performed. Considerable bleeding took place from the separated adhesions, which was controlled by flushing out the abdomen with a hot saline solution. A considerable quantity of the saline solution was left in the abdomen and abdominal wound closed with through and through silk worm sutures. Vaginal gauze drainage combined with postural drainage was used. The patient was removed from operating room in a state of shock, and was in a dangerous condition for several days.

She rallied, however, and has made a good recovery.

First gauze drainage was removed in five days and the wound mopped out and fresh gauze replaced. These dressings were changed daily and at the present time patient is using one cleansing douche daily for a slight vaginal discharge. She is up and about, gaining in weight and in a short time will be perfectly well.

The paper and operative results were favorably commented upon by Drs. Robbins, Gilliland, Montgomery, Nickerson and Christie.

Dr. Christie thought the shock in hysterectomy overestimated. It being due to the anaesthetic, length of the operation, haemorrhage and manipulation.

Dr. Hart believed that the element in the production of shock was loss of blood. In hysterectomy by the vaginal route there is but slight haemorrhage and consequently little shock.

Dr. Gilliland considered that a great factor in the production of shock was the exposure of the intestines to the atmosphere, such exposure by the vaginal route being reduced to a minimum.

Dr. Rice moved that the Legislative Committee draft and place in the hands of an alderman, an ordinance making it obligatory that City Board of Health consist of Physicians. Carried.

Adjournment.

Geo. E. Rosenthal,
Secretary.

CRAWFORD COUNTY MEDICAL SOCIETY.

Regular meetings are held bi-monthly on the second Thursday. Membership 24.

Officers.

President.....Dr. Frank Dunham
Vice-President.....Dr. L. R. Illyes
Secretary.....Dr. H. N. Rafferty
Treasurer.....Dr. C. Barlow
Board of Censors: Dr. G. W. Fuller, Dr. C. H. Voorheis.

Committee on Arrangements: Dr. I. L. Firebaugh, Dr. C. Barlow, Dr. H. N. Rafferty.

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The Crawford County Medical Society held its Twenty-Fifth Annual Meeting in Robinson, on Thursday, July 13, 1905.

The afternoon session convened at 2 P. M., at the First Presbyterian Church, with Dr. C. H. Voorheis as President Pro Tem.

Those present from the county and from outside were as follows:

Drs. I. L. Firebaugh, C. Barlow, E. L. Birch, C. M. Eaton and H. N. Rafferty, of Robinson; Drs. C. H. Voorheis, J. B. Cato and William Eaton, of Hutsonville; Drs. E. M. Cooley and J. W. Kirk, of Oblong; Drs. G. W. Fuller and J. A. Ikemire, of Palestine; Dr. J. E. Midgett, of Flat Rock; Dr. C. E. Price, of Eaton; Dr. W. K. Newcomb, of Champaign; Dr. S. Joseph, of Melville, Ia.; and Dr. Geo. R. Fowler, of Elizabethtown, Ill.

The present officers were re-elected for the coming year, as above.

The Secretary read the following annual report:

Number of meetings held during year, 6.
Number of meetings missed during year, none.
Largest attendance at any one meeting, 14.
Average attendance for fiscal year, 9.
Number of fully paid up members, 22.
Number joining Society during year, 2.
Number of resignations from membership, 1.
Number of deaths during year, 1.
Number of eligible physicians in County not members, 9.
Number of papers read during fiscal year, 10.
Number refusing to furnish papers, none.
Amount of funds received from various sources, $59.
Amount of funds forwarded to Secretary State Society, $31.50.
Amount paid to Treasurer County Society, $27.50.

After the transaction of other business the afternoon program was taken up, as follows:

1. "Gastric Ulcer".....Dr. E. M. Cooley
   Discussion opened by Dr. G. W. Fuller.
2. "A Consideration of Fractures"
   .....Dr. I. L. Firebaugh
   Discussion opened by Dr. J. B. Cato.
3. "Summer Diarrhoeas in Children"
   .....Dr. C. H. Voorheis
   Discussion opened by Dr. J. E. Midgett.
4. "History of Our Society"...Dr. C. E. Price

These papers were all of a high order, thoroughly practical and up to date, and deserve to be read before the next meeting of the State Society.

The first two papers elicited quite a general discussion, which is one of the best features of our society meetings. The discussion of Dr. Voorheis' paper was cut short, owing to lack of time.

It was moved and carried that the Secretary be given an order on the Treasurer for $12.10 as postal expenses for two years.

It was moved and carried that a special assessment of $2 be made upon every member of the Society, to cover expenses of the banquet.

The Society adjourned at 6 o'clock to meet at 8 P. M. at the beautiful home of Mrs. Charles F. Wilson, where an elegant five course dinner was served.

After the festal board had been cleared, the following toasts were responded to, Dr. Edward L. Birch serving as Toastmaster:

"Welcome".....C. Barlow, M. D.
"The Doctor as a Citizen"..J. A. Ikemire, M. D.
"The Doctor and The Dentist":
.....A. G. Stephens, D. D. S.
"The Doctor in Politics".W. K. Newcomb, M. D.
"A Rolling Stone Gathers No Moss"
.....I. L. Firebaugh, M. D.
"But a Setting Hen Never Gets Fat"
.....G. W. Fuller, M. D.

At the conclusion of this flow of wit and humor, the guests adjourned to their respective homes, each voting this to be the banner meeting in the twenty-five years existence of the Crawford County Medical Society.

DECATUR MEDICAL SOCIETY.

Regular meetings are held in the Decatur Club Rooms the fourth Tuesday of each month Membership 62.

Officers.

President, Everett J. Brown.....Decatur
Vice-President, Ellen F. Grimes.....Decatur
Secretary-Treasurer, Benjamin Bachrach.....
..... Decatur
Board of Censors: S. E. McClelland, Lynn M. Barnes, Cass Chenoweth.

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Tuesday, June 27, 1905, The regular monthly meeting of the Decatur Medical Society was held in the Decatur Club Rooms, with the President, Everett J. Brown, in the chair.

Dr. L. P. Walbridge who recently returned to Decatur after a stay of ten years in St. Louis, during part of which time, he was on the Board of Health and also served in a medical capacity at the world's fair; read a paper on the **Medical Department of the World's Fair at St. Louis,** there was much of interest in the paper and it was appreciated by the members.

Dr. H. C. Jones read a paper on **Foetal Death from Looping of the Cord,** and reported a case, where the foetus had been carried to full term after a supposed death at the seventh month the entire contents of the womb were expelled in one mass, the unruptured sac and placenta being closely adherent, incision of the sac, revealed the cord looped a number of times around each leg of the foetus.

Dr. Lynn M. Barnes read a paper on the **Prevention and Treatment of Fourth of July Tetanus** it was well received and discussed freely, he laid great stress on the thorough cleansing of blank cartridge wounds, and the early administration of Tetanus Antitoxin, advising its use as soon after the injury as possible. Several members told of cases they had treated, and the Society decided that although the newer remedies in the treatment of this disease were very valuable, the older preparations were not to be forgotten. Passiflora incarnata was mentioned by several as a very useful drug in Tetanus and should be given freely in large doses.

Resolutions were adopted urging the mayor and city council to exercise whatever power and authority they possessed, to control and limit the thoughtless and careless use of explosives on the approaching national holiday.

The following were elected to membership in the Society: L. P. Walbridge, N. L. Bourne, J. T. McDavid, S. L. Thorpe all of Decatur. S. L. Stevens, Dalton City; C. A. Miller, Boody; W. J. Saling, Stonington.

The regular monthly meeting of the Decatur Medical Society was held in the Decatur Club rooms Tuesday, July 25, at 8 p. m.

The program for the evening consisted of "A Brief Review of Some New Things in Medicine."

The first paper read was by Dr. C. Martin Wood on "Salt Reduction and Water Restriction in Heart and Kidney Disease."

The next by Dr. Clare Garber on "The Dangers of a Milk Diet in Chronic Bright's Disease."

These papers were both discussed freely and several members reported cases which strongly exemplified both titles.

Dr. M. W. Fitzpatrick concluded the program with a paper on "The Open Treatment of Burns."

Two amendments to the by-laws were proposed, one in regard to the appointment of a board of censors by the president, and the other in reference to the proposing and selection of new members.

On motion of the Society, a committee of three was appointed by the president to draw up resolutions of condolence for our recently deceased member, Dr. David T. Kyner, of Blue Mound, Ill., a copy of the same to be sent his family and also published in the papers.

The committee reported the following resolution and it was unanimously adopted:

Resolved, that it is with deep regret that we learn of the death of our highly esteemed coworker, Dr. David T. Kyner, of Blue Mound, long an honored member of this Society, having been one of the charter members. That we extend to the family and friends our sincere sympathy in their loss, and declare our appreciation of his high character and attainments, his devotion to the best purpose of his profession, and to commend his conduct of life.

He will be sadly missed by the medical profession and by the community in which he lived.

J. H. Randall,
S. E. McClelland,
J. Stebbins King,
Committee.

Attest: Benjamin Bachrach, Secretary.

FORD-IROQUOIS COUNTIES MEDICAL SOCIETY.

Officers.

President ..... S. M. Wylie, Paxton
Vice Pres. ..... D. W. Miller, Gilman
Secretary ..... Robt. Lumley, Watseka

The summer meeting of the Bi-County (Ford and Iroquois) Medical Society, held at Gilman on June 6th, last, was an unqualified success. Despite extremely hot weather, the attendance was large—larger, with a single exception, than at any medical meeting ever before held in this part of Illinois.

Although organized, in affiliation with the State Medical Society, but a few months ago, the membership already includes the name of almost every progressive physician in both counties.

After a banquet, tended the visitors by the Gilman fraternity, and a brief business meeting, the scientific sessions began. The program follows:

1. The President's Address, Dr. S. M. Wylie. Subject: **Floating Kidney.**
2. **Some Experiences in Typhoid Fever,** Dr. D. L. Jewett.
3. **Acute Mastoiditis,** Dr. Chas. Geiger.
4. **Enteric Diseases of Infancy,** Dr. Robert Lumley.
5. **Report of a Surgical Case,** Dr. E. E. Hester. One of the patient's arms was caught by machinery and subjected to severe stretching,

but without demonstrable lesions of, or pressure upon the blood vessels. An almost complete arrest of the circulation in the injured limb soon occurred, which, later, yielded to appropriate treatment. The literature of cases of this class is said to be very meagre—only one report of a similar case, and that from Russia, could be discovered by the librarian of the Newbury library, of Chicago.

The entire program was of an excellence seldom seen at the meetings of county societies, outside our largest cities. The papers were practical, opportune, and dealt with matters of every day interest—the feet of their readers never left terra firma. The discussion was general, instructive and interesting. But perhaps the best thing about the meeting was its **spirit.** Jealousy, egotism and self-glorifying vanity were absent or invisible and in their places were good will, comradeship and mutual helpfulness. Every man present was made to feel that his experience should have gained him some knowledge—one talent or ten, should have taught him some things worth telling—that the present was the time and the place to tell them and that he was given a special invitation to do so. The invitation was generally accepted—fallacies were exposed and facts established.

MONROE COUNTY MEDICAL SOCIETY.

Regular meetings held in Waterloo first Monday in June and September.

Officers.

President ..... J. S. Sennott, Waterloo
Vice President ..... M. G. Nixon, Columbia
Secretary ..... E. J. Lee, Jr., Valmeyer
Treasurer ..... N. B. Pautler, Waterloo
Delegate ..... L. Adelsberger, Waterloo
Censors: J. C. Fults, Waterloo; O. Kuehn, Burksville; S. Kohlenbach, Columbia.

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The society met in regular session June 5, 1905, with President J. S. Sennott in the chair.

Applications of E. T. Lark of New Hanover and W. J. Rose of Columbia, received and they were elected to membership in the usual manner. Former Secretary Adelsberger then read the minutes of the September meeting of 1904, and attached the following statement:

"In July, 1904, Dr. McNally, of Carbondale, visited Monroe County and succeeded in re-organizing the old Monroe County Medical Society which was granted a charter in 1888, but had held no regular meetings for several years into the present society. Since last year all but five out of 19 physicians in the county have become members."

Motion was then made, seconded and carried that the new secretary, Dr. Lee, send each physician in the county, not now a member a blank application and invite them to become members.

Motion made, seconded and carried that the installations of officers, Paulter, Kolenbach and Nixon be deferred until the next meeting owing to their unavoidable absence from this meeting.

Dr. Fults read a very interesting paper on **Typhoid Fever, with case,** laying particular stress on a limited diet and proper disinfection of all excreta. The case he presented showed a typical typhoid temperature. No nourishment except boiled milk and plenty of sterilized water was given for eight weeks and though hemorrhage followed, patient made a good recovery, he places his main reliance in the sulpho-carbolates in this malady. Drs. Sennott, Kuhn and Lee took part in the discussion which followed.

Dr. Heidelberg presented a report of an interesting case of **Pleural Effusion.** Girl ten years old operated on and four pints of pus removed some two months ago and at this time discharge amounts to three ounces daily. No odor to present discharge and no depression.

Chair oppointed Drs. Pautler, Kolenbach, Lark and Rosa to entertain the society at its next regular meeting in September.

Adjourned.

WAYNE COUNTY MEDICAL SOCIETY.

Regular meetings held in Fairfield the second Wednesdays of January, April, July and October. Membership, 20.

Officers.

President ..... W. M. Johnson, Johnsonville
Vice President ..... J. D. Harlan, Fairfield
Secretary ..... J. P. Walters, Fairfield
Treasurer ..... F. Bean, Fairfield
Censors: T. J. Hilliard, Jeffersonville; W. C. Sibley, Fairfield; B. E. Garrison, Wayne City.

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The Wayne County Medical Society held its regular meeting in the office of Drs. Walters and Harlan, Wednesday, July 12, 1905, the president, Dr. W. M. Johnson, in the chair.

The meeting was called to order at 2 p. m. Members present, Drs. B. E. Garrison, Wayne City; C. O. Truscott, Cisne; J. E. Dixon, Sims; T. J. Hilliard, Jeffersonville; W. M. Johnson, Johnsonville; F. Bean, W. C. Sibley, Hal Morlan, J. D. Harlan and J. P. Walters, Fairfield.

After some business pertaining to the welfare of the society was disposed of, Dr. J. D. Harlan gave his method of treatment and care of patients suffering from summer diarrhea, limiting his remarks to this disease in children. The discussion of this subject was spirited, and was engaged in by all present. Some of the members present considered the disease an inflammatory trouble, and used opiates, while others contended that it ws not inflammatory, especially in the earlier stage, and think it dangerous to use opiates, but relied on eliminating the products of fermented food, and intestinal antiseptics. All were of the opinion that the disease is due to heat and improper diet.

Under the subject of "Report of Cases," Dr. J. P. Walters had a patient before the society who is suffering from a tumor situated in the deeper structure of the upper and outer portion of the thigh. All the members of the society present, examined the case, and entered into a free discussion after the patient had retired.

Dr. C. O. Truscott introduced the subject of intestinal parasites, claiming as his opinion, that there is a much less demand for anthelmintics today than there was twenty-five or thirty years ago, and asked for remarks on this subject by the older members of the society.

Dr. W. M. Johnson said that thirty-five to fifty years ago, when people were not as careful in living as now, almost everybody using surface water, he had almost as many calls to prescribe for worms as for chills, and his prescriptions were about as likely to bring worms as his prescriptions for chills were to break the chills, and had to be repeated almost as often. Dr. B. E. Garrison said he thought the lack of calls for anthelmintics is due, to a great extent to the fact that nearly everybody understands the symptoms for worms, and buys some of the patent nostrums, instead of going to his family physician.

Under the head of "Report of Committees" it was found that the committee appointed to confer with the county court in regard to pauper practice is not yet ready to report; that the greatest and the worst hindrance to the successful work of this committee is the failure to get all the physicians in the county to become members of this society, so as to be a unit in a work of such magnitude and of so much importance.

Motion by Dr. J. E. Dixon that the secretary of this society procure a good speaker from among our professional brethren to deliver an address to the general public on the second Wednesday night of October next, the secretary to procure a place for the meeting. Subject: **The Relation that Should Exist Between the Physician and the Public.** Motion prevailed.

Moved and carried that the secretary read, at our next meeting, **Principles of Medical Ethics of the American Medical Association.**

Adjourned to meet at Walters and Harlan's office, October 11, 1905.

Chicago Medical Society.

The Medical Society of Cook County, Regular meetings are held every Wednesday evening from October to June at the Chicago Public Library Building, Randolph Street Entrance in the large hall on the ground floor toward West end of the Building.

OFFICERS:

C. S. BACON, 426 Center Street .....President
FRANK X. WALLS, 4307 Ellis Avenue .....Secretary
A. E. HALSTEAD, 2937 Indiana Avenue.....Treasurer
W. A. EVANS, 103 State Street.....Chairman Medicolegal Committee
WM. HARSHA, 103 State Street.....Chairman Membership Committee

AUGUST, 1905.

SENSORY NERVE ENDINGS AT THE ENTRANCE TO THE LARYNX WITH SPECIAL REFERENCE TO THE STRUCTURE AND FUNCTION OF THE TASTE BUDS.

By Dr. J. Gordon Wilson.

(Extract.)

Laryngologists are apt to regard the function of the larynx as essentially for voice production, and to overlook the fact that it has another function of great importance in the animal economy, a function compared with whose antiquity the voice is but a thing of yesterday, namely, the protection of the respiratory passage from irritants and during swallowing. The closure of the larynx is the one never-failing office of the larynx; the arytenoid cartilages and their muscles are the only ever present structures. "The original function of the vocal cords was to protect the air passages—speech being a superadded function."—Bland Sutton. In birds the function of the larynx is to guard the trachea, the vocal function is entirely removed from the larynx.

In order to effect this closure the vestibule of the larynx is extremely sensitive; from an anatomical point of view this fact is recognized by the number and variety of its sensory nerve endings. This is the more impressed on one when a comparison is made between the relative number and distribution of the endings on the lingual with those on the laryngeal surface of the epiglottis—the laryngeal far surpassing in variety and number the lingual.

In addition there is lodged in the vestibule of the larynx a sense of which few are aware, the sense of taste; a special sense whose presence is strongly upheld by some and equally strongly denied by others. All are agreed that over the upper part of the laryngeal mucous membrane taste-buds are distributed, comparable to those of the tongue, but they still remain

Read at the meeting of the Laryngological and Otological Society.

mysterious organs about which little has been written and about whose function we are still in the region of conjecture.

The nerve trunks which carry fibers to the vestibule of the larynx are well known; but with regard to their central origins and their peripheral terminations much has yet to be done. The main nerve supply is the superior laryngeal. By this means there are conveyed fibers from three distinct sources, from the vagus, from the glosso-pharyngeus, and from the sympathetic. While the nerve branches are chiefly distributed on the side to which they belong, numerous fibers can be traced across the middle line, and after section of the superior laryngeal on one side, nerve degeneration is seen on the other side of the middle line. The main branches break up into sub-epithelial plexuses, from which arise the nerve endings.

The nerve endings may be divided into two groups, sub-epithelial and epithelial. The sub-epithelial group presents both encapsulated and un-encapsulated varieties. The encapsulated are chiefly modified Meissner corpuscles, nerve coils, and some varieties difficult to classify. The unencapsulated are chiefly tree-like endings, but Ruffini endings and coils can also be seen. Of all these varieties the most numerous are the tree-endings.

The epithelial nerve endings are present in three varieties—first, in ciliated epithelium; secondly, in stratified epithelium; thirdly, in connection with the taste buds. In all these forms the varieties of endings are non-medullated and varicose.

Drawings were shown of all these varieties of nerve endings.

The taste-buds lie in the stratified squamous epithelium. They are not concealed in furrows as in the Circumvallate papillae of the tongue, but lie on an exposed surface. They are comparable in structure to those of the tongue. They are abundantly supplied by nerves—around the bud (perigemmal) within the bud (intragemmal), and at the base (subgemmal).

The two principal hypotheses in regard to the functions of these buds were discussed, namely:

1. As to whether they were mere phylogenetic residues—this hypothesis resting on the decrease which is apparent from a comparative study of the taste-buds in vertebrates, and on the restriction of area which occurs in man at various stages of development.

2. Whether they were reflex organs to intensify the closure of the larynx during the passage of food—a hypothesis which is based upon the abundant nerve supply, their localization, and their functional activity.

JOINT MEETING OF CHICAGO MEDICAL AND CHICAGO GYNECOLOGICAL SOCIETY.

Premature Placental Detachment. (Abruptio Placentae.)

By Joseph B. De Lee, M. D., Chicago.

Professor of Obstetrics, Northwestern University Medical School; Consulting Obstetrician to Cook County Hospital; Attending Obstetrician to Wesley, Mercy, and Provident Hospitals. Obstetrician and Medical Director of the Chicago Lying-in Hospital and Dispensary.

In normal labors separation of the placenta does not usually commence until the child has been delivered. It may, however, normally begin as the trunk of the child is passing through the vulva. Observations in cases of Caesarean section have shown the placenta separating as the child was removed, and also, that it remains generally attached till the contraction and retraction of the actual third stage have begun.

We may, therefore, speak of premature placental detachment in all cases where the placenta separates, in whole, or in part, from its attachment to the uterus, before the head of the child has been delivered. In breech cases the same definition will apply, and is even more applicable from a clinical standpoint.

Under the terms of this definition we may include several examples of detachment of the placenta.

First. Placenta previa. Placenta previa is the development of the placenta in the lower uterine segment, in the zone of dilatation. When such dilatation begins, the placenta begins to separate and hemorrhage results. This form of detachment is not to be considered in this paper.

Premature detachment of a placenta situated low in the uterus may give rise to symptoms of placenta previa and also of premature detachment, as it is to be considered in this paper.

Second. The placenta may separate during the last few minutes of the second stage of labor. The child is delivered, dead or in a state of asphyxia depending on the length of time since the interruption of its circulation took place. The exit of the child is attended by a gush of blood and often followed immediately by the placenta. Such cases are not rare. They often explain the cause of a still birth in an apparently normal labor. A short cord may be the underlying cause, or the unruptured membranes, pushed before the drawing head may draw the placenta after it. Constant watch of the fetal heart tones in the second stage will do much to discover the danger to the fetus and enable one to save the child by immediate delivery.

Similar to this form of detachment is the premature separation of the placenta in breech cases while the trunk is being delivered. The clinical importance of the occurrences is slight.

Third. The separation of the placenta in twin cases after the delivery of the first child requires early diagnosis and quick treatment. Both mother and child are here endangered. The condition is recognized by the appearance of external hemorrhage and the change in the heart tones of the second child.

Fourth. In shoulder presentations, in prolonged labor in head presentations, the placenta not seldom separates before delivery. Experience has shown that in such cases the danger of hemorrhage is not great, probably because the uterus is contracting forcibly and holds the placenta firmly against the presenting part, and because the contracted and retracted uterus mechanically closes the vessels in the placental site.

In performing version the writer has felt the placenta rise off the uterine wall under his hand. In these cases the child was saved only by rapid delivery.

Finally there is the premature detachment of the normally implanted placenta in pregnancy or early in labor. This means just what it says, but the phrase is cumbrous and one would wish for a shorter term, to use in apposition to placenta previa the other most common form of obstetric hemorrhage.

Rigby, in 1776, was the first sought who to separate the hemorrhages due to placenta previa from those arising from premature detachment of the normally implanted placenta. He described the symptoms and findings appropriate to each, but some of his cases were evidently combinations of the two pathologic states.

Nevertheless he had a clear idea of the two conditions as they existed in types. The one he called "unavoidable hemorrhage," because the flow inevitably followed separation of the placenta situated in the zone of dilatation, as the result of the necessary dilatation, i. e. placenta previa.

The other, Rigby called "accidental hemorrhage," because the hemorrhage resulted from an accidental separation of the placenta due to some external circumstance, as "violence, peculiar laxity of the uterine vessels, badness of habit, or fever, or influence of the passions of the mind."

The English still retain this term, "accidental hemorrhage," to express what we call, (and the Germans too) premature detachment of the normally implanted placenta. Certainly a less cumbrous term is desirable, and R. W. Holmes has suggested Ablatio Placentae. A latin term that more nearly expresses the anatomical conditions present would be abruptio placentae, from ab, away, from and rumpere to break off, or tear off. Ablation means to remove or destroy. Neither term expresses prematurity, or that the placenta is normally situated, although abruption conveys a sense of suddenness or unexpectedness.

Etiology. The causes of this condition are variously given. Accident plays a certain role, but not such an important one as has been believed. Probably in most cases the accident has acted on a diseased uterus, or decidua or placenta, or in the presence of constitutional disorders as hemophilia or scurvy. Mechanical causes of separation occurring during labor as a short cord, have already been mentioned.

The best proven causes of abruption of the normally implanted placenta are, endometritis decidua, nephritis, acute and chronic and disease of the uterine wall. Isolated cases are reported where hemophilia, Basedow's disease, acute hemorrhagic infectious diseases, were present. Under such circumstances any trauma, however trivial, even the disturbance of the circulation due to mental excitement, may cause the initial bleeding. Once a separation of the placenta begun it is easy to understand how it may become complete.

That a healthy uterus can distend sufficiently to allow a fatal hemorrhage within it has been denied by Schroeder and others. The normal uterus is not filled by the growing ovum, and a hemorrhage, or some other influence may paralyze its retractility, witness those cases of dilatation of the uterus in the early months of pregnancy.

Frequency. It is impossible to determine the frequency of this accident. If one includes all the varieties of premature placental detachment the occurrence is very common.

If one specifies only those cases assembled under abruption of the normally implanted placenta they are quite rare, but not so rare as formerly thought. The cases of partial separation of the placenta are not uncommon. Here the condition is often recognized only by finding an old clot in a depression of the placenta. The cases of complete separation of the placenta are very rare and very fatal.

Symptoms. The detachment may be partial or total, and the hemorrhage may be external, or internal, or both. The blood may rise up the placenta in the middle, either bulging the placenta inward or the uterine wall outward. The blood may burst through the membranes into the liquor amnii; it may separate the membranes all around, allowing the ovum to rotate in the uterus so as to bring the placenta over the os, (prolapsus placentae); all these are the internal or "concealed" hemorrhages. The blood may trickle down under the membranes and escape externally; this may be the only bleeding (external form), or most of the blood accumulates inside the uterus, only part escapes (combined form.) All these varieties have differing clinical pictures depending on the degree of separation of the placenta, and the amount and rapidity of the hemorrhage.

If the abruption of the placenta is complete the fetus dies, if only partial it may live. If the hemorrhage is slight and external, this may be the only symptom, and the case may possess no threatening aspects at all.

If the separation and hemorrhage are greater the symptoms of anemia and the signs of a hemorrhage into the uterus are present. The latter are sudden and increasing distension of the uterus and of the abdominal wall, tenseness of same, an irregular shape of the tumor, (bulging of the hematoma under the placenta), ten-

derness of the uterus especially at the site of the placenta. The patients usually have a sudden pain, later continuous on one side of the womb. If the hemorrhage is all internal, and copious shock is present in addition to the effects of anemia. This is due to the stretching of the uterus. Sometimes there may be a partial rupture of the uterus as occurred in a case of the writer.

External hemorrhage is present in nearly every case, and in the intervals of the gushes a discharge of serum not infrequently occurs. No diagnostic reliance may be placed on the occurrence of the flow with the uterine contractions or in the interval. In a tense uterus the hemorrhage is more likely to appear externally. In a weak uterus the blood may accumulate more readily.

The amount of blood discharged externally should not be used as a criterion of the severity of the case, only the signs of anemia as indicating the amount of internal hemorrhage may be consulted.

In the differential diagnosis we have to consider, placenta previa, rupture of the circular sinus of the placenta, rupture of the uterus, rupture of a collection of pus into the belly, rupture or torsion of ovarian cyst, and extra-uterine pregnancy. The time assigned to this paper precludes a discussion of these points.

Prognosis. In the mild cases the maternal mortality is not appreciable, but the fetal mortality is high. In those cases occurring near the end of labor the mothers usually recover. In the severer cases, especially in the concealed variety the maternal death rate is about 50 per cent and the fetal 90 per cent. Goodell gives 51 and 94, Holmes 32 per cent and 86 per cent. Goodell's figures for the occult or concealed hemorrhages was 52 per cent, and for the open variety 41 per cent.

Treatment. Few subjects in obstetric practice have as little definiteness regarding proper treatment as has abruption of the placenta. Views of reliable authorities are at utter variance. Time will not permit a discussion of the different views and methods, so the writer will present the following summary of the treatment he recommends, basing the same on his own experience of 12 cases and on a careful study of many cases reported in the literature.

1. If the cervix is effaced and the os dilated deliver at once.

2. If the cervix is effaced and the os only partly dilated, procure complete enlargement of the os by manual dilatation, the Bossi dilator, or by incisions and deliver at once.

3. If the cervix is neither effaced nor dilated deliver at once by vaginal or abdominal Caesarean section.

4. If the symptoms are not very threatening or if the patient's surroundings are not favorable for such radical operative measures, or if the physician has insufficient skill, tampon the vagina very tightly with dry cotton using a large amount, put on an abdominal binder drawing it as tight as possible, using the Spanish windless principle, give ergot and wait.

5. Do not rupture the bag of waters except just before delivery, and if the membranes rupture before this time, immediately fill the cervix with a colpeurynter or Barnes' bag.

6. While performing the above treat the anemia.

7. In the 3d stage of labor be prepared to treat hemorrhage promptly and definitely. The utero-vaginal tampon is very valuable.

In conclusion, two recent cases of abruptio placentae may be reported.

Case 1. Mrs. S., primapara, age 26. Her general history is negative. Endometritic symptoms are present. In her first labor she had adherent placenta with severe post partum hemorrhage from which she nearly died.

She moved to the city from Missouri and while in apparent good health began to flow from the uterus. There was little pain until labor pains came on. There was a slight bleeding for six hours and the patient took to bed.

Examination at this time showed pregnancy of eight and one-half months, a hard, resistant, symmetrical, tender uterus. Fetal heart tones 160 regular, strong. A continuous slight oozing was still taking place, and internal examination showed the cervix effaced and dilated to the size of a quarter. No placental tissue could be felt. Many clots came away during the examination. The patient was suffering from the effects of hemorrhage though the pulse was only 96.

She was immediately taken to Mercy Hospital. On arrival it was found that the external bleeding had ceased, that the signs of internal hemorrhages were less and that strong and regular uterine contractions had set in. Expectancy was therefore performed, but it was doubly watchful.

Nine hours after the first examination the head came down on the perineum and the bag of waters was ruptured allowing the immediate delivery of a deeply asphyxiated child. The placenta followed at once. The child, premature and weighing 5 pounds was revived by means of the tracheal catheter. The placenta is shown in this drawing, the dark area being a tough firmly adherent blood clot. The woman was pale and weak for several weeks but finally recovered, as did also the child.

Case 2. Mrs. A., primipara, age 27; had always been sallow and sickly. Two years ago had a severe infectious tonsillitis which affected her kidneys. Hyperemesis during the early months and when she was pregnant six and one-half months, the feet began to swell, headaches occurred and albumen was found in the urine. Labor began March 21, 1905, during the early morning. The patient was having irregular pains and a severe headache when suddenly the pain in the abdomen became intense and continuous while the headache ceased.

Profuse external hemorrhage appeared, and the patient was prostrated. Examination showed a tense hard uterus symmetrical and tender all over. No fetal heart tones were audible. Vaginally the cervix was tightly closed the vaginal portion long and pointed. The urine was cloudy, dark, scanty and thick with albumen. Vaginal Caesarean section was performed, and the small dead fetus easily delivered; it was followed immediately by the placenta and many

dark clots with fluid blood. Patient recovered.

Since reading the above paper the author has had another case of abruptio placentae, a i-para, suffering from albuminuria, who was delivered by rapid dilation of the cervix and forceps. Both child (three and three-eighths pounds) and mother lived.

34 Washington street.

THE CHICAGO NEUROLOGICAL SOCIETY.

A regular meeting of the Chicago Neurological Society was held April 20. Dr. Moyer, President, in the chair.

Dr. D. O. Hecht, at the request of Dr. Patrick, presented **A Case for Diagnosis (Multiple Sclerosis?)**, with the following history: D. E., a male, 47 years old, of Irish and Welsh descent, but born in the United States, was seen for the first time in March, 1905, at the clinic for Nervous Diseases, Northwestern University Medical School. He is a butcher by trade, has been married 22 years and is the father of 13 children, the last of whom was born five weeks ago (Feb., 1905.) Eight of the children are living and enjoying good health; of those deceased, the first born (twins) died at birth, the third born died of appendicitis, the fifth of spinal meningitis, the 11th of scarlet fever and the 12th was miscarried at the third month.

Family history is negative. Knowledge of the grandparents is lacking; the mother lived to the age of 76 in good health, and the father died at 87. The patient is one of 14 children, but can give no information regarding any of them except two sisters, who are living and well; the others have been lost sight of.

The period of infancy and early childhood was uneventful. The patient was brought up on the home farm until the age of 15, when he left to take up work in the soft coal mines of Ohio, where he applied himself steadily for a period of five years. As a boy he had been singularly free from all illness and the mining occupation had in no way affected his health.

At the age of 21 he came to Chicago and got employment as a laborer in the Stock Yards. During his early experience there, which covered a period of four or five years, he was compelled to do various kinds of work, some of which took him into cool cellars for days and months at a time; but it was before the era of ice machines and the cellars were not nearly so cold as they are now. In 1883, whether from exposure or not, he is unable to say, he suffered from an illness of two weeks' duration, characterized by malaise, headache, dizziness and very slight fever, which his physician pronounced as typhoid fever. The diagnosis may be doubted, since the indisposition was so slight as to not even require his going to bed. He was enabled to return to his former work with his accustomed strength and vigor. Soon afterward, he took up the butcher trade, which he has followed uninterruptedly since.

In 1899 (16 years ago), the patient experienced for the first time, dull, boring pains in the muscles of the small of the back, which came and went at close intervals, and were especially keen upon efforts at bending far forward and backward or straightening up from a stooping posture. His description of the discomfort reminds one of the lumbago pains. The shoulder, elbow and knee joints have been the seat of localized pain, severe enough at times to be quite distressing, and on several occasions the fifth and sixth intercostal areas on the left side have been invaded. Inquiry reveals that there has been little or no stiffness in the parts affected, but for the most part just enough soreness to interfere at times with work. The painfulness at the elbows often made it very hard for him to hang sheep on hooks preparatory to skinning them. Wet and damp weather were without influence; long sitting or inactivity did not stiffen the parts involved; swelling and other periarticular symptoms were absent.

Eight years ago he received a blow on the right lower jaw, with subsequent development of a superficial abscess of the soft tissue under the right ramus, which after proper drainage caused him no further inconvenience.

Up to the time of the patient's coming to Chicago to work in the "yards," he had been totally abstemious in regard to drink, and a man of modest habits in all things; with his new occupation he took to drinking both whiskey and beer in quantities, and it was not long before he was consuming six or more whiskies a day and as many as ten pails of beer. The practice of this excess was kept up for fifteen years and was brought to an abrupt end in January, 1905. He ascribed his hard drinking to the fact that it did not affect him as it did other men; only occasionally had he been intoxicated; his head may have suffered; his legs never. His sudden quitting had caused him no discomfort. He has sustained no injuries aside from a few bruises and cuts received in the work of killing and skinning live stock. A single gonorrheal infection is admitted; syphilis is strenuously denied; nor does anything in the subsequent history or examination indicate its presence.

Onset of the present illness about six years ago with a sense of weakness and "giving away" in the knees. This was especially felt while carrying sheep into the cellars after they had been killed and skinned. The feeling of uncertainty and weakness increased to a point where after the first year or so he noticed it when walking on the level. Attributing it entirely to his over-indulgence in liquor, he thought it unnecessary to consult a physician, and the fact of his not losing a day from work strengthened the belief that his was but a transitory difficulty. In the act of stabbing and skinning sheep, it was customary to hold them fast between the knees. The strain of this position on the increasingly weak leg adductors, together with self-inflicted cuts on the hands from repeated slips of the knife, caused him enough discomfort and concern to seek medical advice.

About a year ago, his hands, especially the left, began to show signs of shaking, which became so aggravated that drinking from a cup held in the left hand was attended with great difficulty. To lesser degree the right hand was in the same plight. In his opinion, the crude

strength of his hands is not what it was, but it is infinitely better than that of the legs, which have become progressively weaker, until now he regards them unequal to the least sustained strain.. Neither rigidity nor dizziness is complained of. At no time during the past fifteen years has he experienced root pains or sensations of numbness, deadness or tingling anywhere in the body.

Sensory disturbances, both subjective and objective have always been and are at the present time conspicuously absent. About six months ago patient found it necessary to wear glasses for reading purposes; vision for distance remains very acute. Hearing and the sense of taste and smell are in no way impaired. There are no bulbar symptoms. There has been no complaint of vesical or rectal disturbance of any kind. The bowels move daily; the appetite is fair; the sleep is good, and there has been no appreciable loss in weight.

Status praesens: The patient is a tall, well-developed, muscular man and weighs about 175 pounds. Examination of the thoracic and abdominal viscera proved negative. There was no temperature; the pulse count was 80. The blood and urine findings of a single examination was negative. The special senses show nothing of interest. There is no anomaly of speech. The cranial nerves are nowhere involved and the fundi oculorum reveal no changes. There is no nystagmus. The entire clinical picture is evolved from motor premises and the gait immediately attracts attention. It impresses one as spastic, wobbly and uncertain, as if the knees were giving away and unable to keep the feet in the line of direction. The eyes are held riveted to the floor, as is the habit in tabes, and the heels, which are brought to the floor first, come down hard enough to jar the whole body. The shakiness in the limbs is more noticeable to the patient in turn-about movements and when he first gets up from a chair and starts off. The Romberg sign is not present.

In the recumbent posture, the incoordination of the lower limbs appears still more marked. Attempts to fix the right heel to the left knee are not successful, and the same holds good in fixing the left heel to the right knee. The excursion to the knee is good, but a violent jerking and floundering about attends the effort to hold it fixed. After repeated trials some of the unsteadiness is overcome and fixation meets with partial success. Control in this maneuver is also better with the clothes and shoes on, since their weight is prone to limit the irregular jerking movements.

With the patient on his back, the legs raised and spread widely apart, the limbs and trunk oscillate in all directions in a most disorderly fashion, despite straining efforts to control same. It is impossible to maintain fixation for more than a few seconds, and the arythmic movements are more aggravated with the whole leg extended on thigh in midair than with the upper leg extended on thigh and lower leg flexed from the knee. There is an increase in the amplitude of motion when the legs are widely adducted, and a decrease when brought in apposition. Coordinate movements of the arms and hands are much better executed than those of the lower limbs. Today he picked up a match or pin from the floor with ease, but says this varies and is at times very hard to do. Pouring water from one test tube to another reveals a coarse tremor. The right index finger is brought more steadiy and directly to the nose than the left. He approximates the inches fairly well, but strangely enough, he does this maneuver much better standing with the feet closely together (as in Romberg position) than with feet spread. Large movements of the arms are accompanied by notable lack of balance in the trunk and legs.

Protrusion of the hands and separation of the fingers reveals, more in the left than the right, coarse, irregular movements. Refined tests applied to the smaller musculature, such as needling and buttoning, elicit marked tremulousness. The crude muscular strength when measured by the examiners, is shown to be not much impaired. He overcomes tests of antagonism with good strength. Adductor and abductor groups in the legs seem stronger than the patient is willing to confess, and the same holds good of the flexors and extensors. In testing the lower limbs together, the left side may have been a shade weaker than the right. The left grip appears slightly weaker than the right, but this I think is also relative. There is no visible atrophy, but here and there the muscles feel a bit flabby.

The pulpillary reflex is normal to light and accomodation; the jaw jerk was not elicited. With the arm hanging loosely over the back of a chair, the triceps jerk seemed more responsive on the right than on the left. Wrist taps were not elicited. The pectorales and spinati show excessive myotatic irritability and exaggerated responses. The knee jerks were bilaterally exaggerated. Abdominal skin reflexes were present, but the cremasteric was not elicited. The Achilles jerks are bilaterally equally brisk. The Babinski, Gordon and Oppenheim reflexes were absent. No ankle clonus; plantar skin reflex was very sensitive. Over the pectoralis the phenomon of myoidema was noted. Fibrillary twitchings were absent. The tactile, pain and thermal sense are perfectly intact and exquisitely accurate. The sense of orientation was exceedingly good, even when confined to slight degrees and angles of deflection in the single toes.

Dr. Hecht said that when he first saw this case, in the absence of any sensory phenomena, and in the presence of spasticity and what he took to be incoordination and not tremor, he thought of its being perhaps a primary spastic affair, limited to the lateral tracts.

That view would not explain the incoordination, the ataxia the man had. He had been shown to Dr. Patrick, after other men looking him over carefully, and Dr. Patrick will explain his attitude. On walking, the patient showed the jerking of multiple sclerosis, the quivering and shaking throughout the whole body. The head moves a little. There is no nystagmus,

no scanning speech—nothing more than this fair degree of spasticity.

Dr. Patrick said he thought the condition was typical of multiple sclerosis. Dr. Hecht had been under the impression that the trouble would show more in the excursion than in the fixation. Dr. Patrick spoke of the condition in many cases showing in the act of drinking; the patient brings the glass up fairly well, and then the trouble begins.

Dr. Hecht said he thought this was a tremor of multiple sclerosis and considered the inability to fix an ataxy. He has been sick six years, and there have been remissions, the only history being that of pretty strong alcoholism.

Dr. Kuh said that against disseminated sclerosis was the late onset. It never begins so late as that. He thought, however, disseminated sclerosis, in the broader sense, was pretty safe.

Dr. Williams said it seemed so characteristic a tremor, it appeared it would rather be a case of true disseminated sclerosis in the sensory tract as well as the pyramidal tract. It was hardly probable the diffuse sclerosis causing a combined system disease, as in six years it would not fail to have shown some symptoms. He had recently read an article in which a systematic test had been made of the bone sense, and it was found the only sensory symptom present in tabes, for example, and also of mixed sclerosis. Diabetes was the only other condition in which it was present in this series of 200 cases, and never present in condition of health. He said he referred to the vibration.

Dr. Kuh said that in the majority of cases it was not usual for the tremor to be greater in the legs than in the arms in multiple sclerosis, but there was no reason why it should not be. The lesions are more marked below the cervical margin.

Dr. Patrick said that he thought the reason the intention tremor in the legs is not more frequently mentioned is because it is not frequently examined for. He frequently finds it.

Dr. Hecht said he thought the text books were somewhat in error in giving the impression in regard to the tremor, that the excursion was very good, or rather, that in the effort to fixate it subsides.

Dr. Kuh said the reference was made to the effort on the part of the patient. In bringing the fingers together, they travel pretty well, and at the stopping place the trouble begins. Asking the patient to bring the fingers together and stop just before touching, and hold them there, will often bring out intention tremor when the ordinary test will not.

Sarcoma of the Brain, with developments of acute symptoms two weeks after an adenoid operation, was shown by Dr. J. H. Hess, who first described the tumor and showed the specimen.

The child, (5½ years of age) had received a blow on the head a year and a half ago, but on examinng the skull there were no findings in that region. The dura was very deeply injected all around, but there were no other changes except at the base, where there was a slight meningitis. In no part of the dura were tubercules visible. The pia presented about the same condition. Upon external examination there were no visible changes of the brain. On section and opening into the lateral ventricles, a large, mulberry-like mass was noted in the anterior horn of the left lateral ventricle which goes through the corpus callosum into the anterior horn of the right lateral ventricle, the mass being about the size of a duck's egg, reddish brown in appearance, and containing no nodules. The posterior horn of the right lateral ventricle was filled with a similar mass. The choroid plexuses on both sides were normal. There very marked internal hydrocephalus. In the tumor mass of the posterior horn on the right lateral ventrical was a small abscess containing sero-purulent matter and anterior to this were four small cysts containing clear fluid; the left with a clear fluid. The anterior half of the right lobe of the cerebellum was composed of a tumor mass. Microscopic examination showed a small round-cell sarcoma.

The history is even more interesting, and follows:

Clara S., aged five years, 1½ years ago received a blow on the head with a brick, one-half inch to the left of the median line of the forehead at the hair line. The wound bled profusely and caused headache for ten days, which disappeared and she regained her usual good health. One year ago she complained of earache which was followed by a purulent discharge from the same ear, the side not being remembered by the mother. Six months ago she suffered from recurrent headaches, which the mother described as "spasmodic flashes," coming on suddenly with flushing of face, severe pain, and shortly disappearing. These continued more or less irregularly up to October 19, 1904, when both tonsils and a large mass of adenoid vegetations were removed. Two weeks later she complained of severe headaches and dizziness, followed shortly afterwards by severe attacks of psychic vomiting, apparently without cause and without definite relation to the time of eating. She also suffered at this time from vertigo and internal strabismus of right eye, which cleared up in three days. During this time the temperature ranged between 98.6 and 103 degrees F. Pulse is not remembered. She also complained of severe frontal headaches and pain in the right shoulder and arm, apparently due to nerves of brachial plexus. Flexion and extension of head at this time produced no symptoms.

These symptoms improved, with irregular exacerbations, and three weeks later she developed what appeared to be a spasmodic torticollis. Still later, when this disappeared she had photophobia and the mother noticed ataxia in gait. Since then the symptoms have persisted with improvement at times. The mother also noticed limpness in the left arm, which improved but did not entirely disappear. Headaches appeared suddenly, which, at rest, disappeared as suddenly. While out walking she suddenly complained of blackness before the eyes and had to be carried home.

March 10, 1905, 10 A. M., when seen she had

right sided facial paralysis, with paresis of left leg and weakness of left arm, although able to grasp the hand with considerable vigor. The mind was clear, the little patient remembering the doctor's name, from a visit two months previously. The mouth was drawn to the left in speaking and the right eyelids did not close. Photophobia. Tongue slightly drawn to the left; could not make grimaces with left side of face. Slight strabismus of right eye had apparently not improved. Some retraction of head, severe frontal headaches and drawing up of legs; pulse 80. Pupils react to light sluppishly; tache cerebral; abdomen retracted, reflexes absent.

At 6 P. M. of the same day opisthotonus; legs flexed on abdomen and child comatose. Temperature 98.8, pulse 108.

March 11th, 10 A. M., temperature 100.6; pulse 108. Opisthotonus; legs flexed and rigid; child comatose; pupils reacted, left fairly well, right sluggishly; choked disc. Bowels moved involuntarily first time; spine apparently very sensitive in cervical region; knee reflexion absent.

An interesting feature of the case is that the child had very few symptoms before the adenoid operation, but it was unfortunate that she began to have many symptoms two weeks following it, leading to the supposition that the operation may have been a direct etiological factor in her illness. This, however, was disproved at the autopsy. The test tubes were found to be infected, and it was a question whether the fluid was pus or necrotic tissue.

Dr. Harold N. Moyer said that the case illustrates several things apparent in tumors in children; he had been struck by the enormous character of the tumor in children. These are probably never diagnosticated until late in the disease. He had a case that resembled somewhat this related by Dr. Hess, the same obscure and scattered symptoms, choked disc, was taken with sudden blindness, and died three or four days afterwards. The child had cerebral vomiting and all the more distinct signs of cerebral pressure. The very large tumor mass in this case is also significant of the tumors of children. The skull is flexible and tolerates pressure, and the tumors are larger than in adults.

Dr. L. H. Mettler, in connection with this, called attention again to the case of the 9-year-old boy shown at the last meeting, which he had very hurriedly and inadvertently had brought in as hysterical amblyopia. The Saturday after that meeting the child was examined by Dr. Beard very carefully as to the eyes. The fundi, at a casual examination would be considered normal; absolutely no atrophy. Around the musculae there was a little change in the blood vessels, a slight oedema; the more prominent vessels showed a slight shadow. The color is gone somewhat and there seems to be a slight extravasation in the minute blood vessels. His findings were fine and delicate, and he said that had occasionally found such condition, where later on a neuro-retinitis appeared. We will probably find there is a growth at the base of the brain or cerebellum or near the pons. Dr. Mettler had asked that the boy be brought for complete examination, but the father returned to say that they had decided to try Christian Science and let medicine alone. Dr. Mettler thinks there is an organic growth at the base of the brain and if the case comes to autopsy later it will probably fit in with the case of Dr. Hess.

Dr. Sydney Kuh said he did not know if it was generally realized, but he thought it a rule rather than an exception to see a post mortem rise in temperature in death from brain tumor. He had, in a recent case at the County Hospital, asked that the temperature be taken after death, and the rise was noted. In Heideloerg they had always looked for it, and frequently in meningitis cases too. It often is 104-5-6 or 7 half an hour after death.

Dr. Hess said that the child's mind was very bright. She was rational and her memory was perfect, which in view of the callosal invasion, was remarkable.

WEST SIDE BRANCH.

A postponed meeting of the West Side Branch of the Chicago Medical Society was held at the Cook County Hospital Thursday evening, May 25, 1905, at 8:30 P. M. Our President, Dr. John A. Robison in the chair. The meeting had been postponed from the week before, our regular meeting night, that members from our Branch might attend the State Meeting at Rock Island.

The evening was devoted to a symposium on Diseases of the Heart and the program was opened by Dr. S. R. Slaymaker, with a paper on **Endocarditis.** Dr. Tieken followed by **Remarks on Pericarditis.** Dr. R. H. Babcock spoke on **The Principle of Prevention in the Treatment of Heart Disease, and** Dr. Joseph M. Patton closed the program by a talk on **Treatment.**

The West Side Branch of the Chicago Medical Society held its annual meeting at the Cook County Hospital Thursday evening, June 15th, at 8:30 P. M., the President, Dr. John A. Robison in the chair.

Dr. C. Volini sent regrets at not being able to read his paper, **Some Cerebral Symptoms of LaGrippe, as Observed Among the Italians,** and promised to have it ready for our next meeting.

Dr. Woodyatt spoke in an able manner on **The Clinical Significance of the Eosinophiles and Myelocytes,** giving an account of original investigations in that line of work.

Dr. John A. Robison gave the retiring president's annual address, reviewing the year's work, expressed his gratification at the good attendance, an average of 31⅛ for the year, and at the high order of merit of the papers read, and thanked the Branch for its courtesies to him during his term of office, and made recommendations as to the future work of the Branch.

On motion of Dr. W. A. Evans the suggestions of the President were to be put in writing and handed to the incoming officers.

The annual election was held and resulted as follows:

President—J. J. Alderson.
Secretary—C. C. Rogers.
Delegate—J. S. Nagel.

The Branch then adjourned until the third Thursday of October.

J. J. Alderson,
Secretary.

New Incorporations.

New corporations were licensed by the Secretary of State at Springfield, as follows:

Neuro Vitae company, Chicago; capital, $9,000; manufacturing medical compounds and appliances; incorporators, J. G. Leonard, Jacob G. Grossberg, Sigmund Misloaski.

Harvey-Jenner Medical university, Chicago; not for profit; educational purposes; M. C. O'Connor, J. Y. Kennedy, F. Mahoney.

Drs. Hoag and Turbin Remedy company, Chicago; capital, $2,500; manufacturing medicines; incorporators, Louis M. Turbin, Gustavus J. Tatge, Charles A. Koepke.

Irresistible Health Methods association, Chicago; not for profit; hygienic incorporators, Henry Silberjorn, Benjamin Bierfeld, Oscar Helbig.

Dr. Wilfred H. Manwaring, assistant in pathology in the University of Chicago, has been appointed head of the new department of pathology and bacteriology in Indiana university, with the rank of associate professor.

Dr. R. D. MacArthur has bought from Mrs. C. A. Spring, the residence property at 448 Dearborn ave., Chicago, for $10,500 cash. The lot is 25x150 feet and the house is a two story brown stone front structure.

Lawn Fete to Aid Hospital.

A lawn fete for the benefit of the Iroquois Memorial Emergency hospital was held at the residence of Miss Elsa Soelke, 189 Humboldt boulevard. Nine children's clubs of the neighborhood united to make the entertainment a success. The bazaar of the Helping Hand club for this hospital recently netted $52.

The Taylorville Hospital fund now amounts to $2,300.

Would It Be Possible?

Really, this mosquito question deserves a great deal more attention than it is getting. It is quite possible, if states would combine, to clean out breeding spots. Even in places where the mosquito is not dangerous, but merely a pest. The war against the insect ought to be carried to the point of extermination. With the disappearance of swamps and foul places the general health would be better and life made more pleasant.—Philadelphia Inquirer.

Dr. John N. Sandblom is Elected to Faculty of the University of Christiania.

The unanimous election of Dr. John N. Sandblom, 1351 Ainslee street, to be dean of the dental department of the University of Christiania was announced in Chicago recently.

Early in May Dr. Sandblom went to Europe to lecture on post-graduate work in dentistry.

The superiority of American dentistry and methods of teaching so impressed the university authorities that the Chicagoan's election to the faculty resulted.

Dr. Sandblom has practiced his profession in Chicago since 1900, when he graduated from the Northwestern University Dental school. He was born and educated in Sweden. He now is on the way to the United States to wind up his affairs.

Funny, Isn't It?

While all patent medicines are not used on the skin, most of them are skin tonics.—Columbia Jester.

Doctors Get Change of Venue.

Dr. Little, of Janesville, and Dr. Venetta, of Lerna, indicted for manslaughter in the Cumberland county circuit court, have taken a change of venue to Effingham county. They are also defendants in a damage suit. It is alleged that Mrs. Zelda Cox died as a result of improper treatment during childbirth.

Dr. Slusher Can Get $1,200.

A few days ago the appellate court handed down a decision in favor of Dr. B. F. Slusher in his case against Bartlett, Frazier & Co. for $1,200, affirming the judgment of the lower courts. It is not known that Dr. Slusher has received the money. He probably would not call for it in person, but he could get it through power of attorney.

Dr. Slusher, it will be remembered, is a fugitive from justice and because of a criminal charge recently brought against him, is supposed to be hiding in Old Mexico.

TELLS OF CHANGES.

Official Statement Issued Concerning Work of Dr. Senn and Dr. John B. Murphy.

An official statement was issued recently by Rush Medical college regarding recent changes in its faculty. The statement says:

"Dr. Nicholas Senn remains at the head of the surgical department of Rush and will have entire charge of the clinical teaching of surgery during the fall quarter. Dr. Senn has also been elected professor of surgery in the University of Chicago and will lecture to the medical class at the university.

"Dr. John B. Murphy has been elected professor of surgery in Rush, and, with Dr. Arthur Dean Bevan, will have charge of the administrative details of the department of surgery and will conduct the clinical teaching of surgery during the remainder of the year."

THE VALUE OF CYSTOGEN
IN
GONORRHEA

is specially pronounced in those forms where gleet is the prominent sympton. Where gleet has involved the deep urethra and bladder the influence of Cystogen is evident in the rapid clearing of the urine a d the disappearance of pus When the urine is acid the addition of Lithia is of value and seems to aid the curative properties of Cystogen.

Samples on application to

CYSTOGEN CHEMICAL COMPANY
ST. LOUIS, MO.

COMMERCIAL FORMS:

Cystogen—Crystalline Powder.
Cystogen—5-grain Tablets.
Cystogen-Lithia (Effervescent Tablets).
Cystogen Aperient (Granular Effervescent Salt) with Sodium Phosphate.

INFANT FEEDING IN SUMMER

The problem of substitute infant feeding becomes more complicated with the advent of the hot months. The milk supply of most communities is bad enough at all times, but in summer it presents grave dangers to the bottle-fed infant. Most peddled milk contains an enormously high bacterial content and the use of preservatives is by no means uncommon. Even pasteurization of milk, once it is tainted, does not eliminate danger.

The rational solution lies in the use of

HIGHLAND BRAND EVAPORATED CREAM

Simply the purest of cow's milk produced on model dairy farms—reaching the factory in the shortest time after leaving the cow, and handled with most scrupulous cleanliness—and sterilized and evaporated by a process which makes it easy of digestion and gives ***absolute protection against all germs and other impurities.*** It is the simplest, most uniform and satisfactory substitute food.

Trial quantity to physicians.

HELVETIA MILK CONDENSING CO.
HIGHLAND, ILL.

The Illinois Medical Journal.

EDITORIAL OFFICE, 522 CAPITOL AVENUE, SPRINGFIELD.
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PUBLISHER'S NOTES.

The Journal is not responsible for any medical or therapeutical views expressed in this department.

LOCAL ANALGESIA.

By Capt. J. W. Houghton, of the English Royal Army Medical Corps.

Abstracted From the Journal of the Royal Army Medical Corps, April 15, 1905.

Baker's method of effecting local analgesia by means of eucainadrenalin solution gives most satisfactory results. I have lately used it for removal of a cystic tumor on the periosteum of the scalp; for the removal of a fibroma on the posterior aspect of left trochanter, involving dissection from the bone; for opening a knee joint and removing loose cartilage; for excision of five varicose veins; for excision and ligature of external hemorrhoids in a case where chloroform was inadmissible; for opening and draining abscess of liver; for varicocele; and for laparotomy for perforating enteric ulcer. In all these operations the patients were free from pain, save the one with scalp tumor which was probably insufficiently infiltrated. Some patients knew when the knife was cutting them, without, however, feeling it as pain.

Barker's formula is:

Beta-eucain	3 grains.
Sodium chloride	12 grains.
Distilled water	3½ ounces.
Adrenalin chloride (1-1000)	18 drops.

The whole quantity may be injected at one time, but one-third of it usually suffices. The adrenalin should be added only when the eucain solution has been boiled and cooled. Infiltration of this solution causes a complete analgesia lasting several hours, the anesthetic effect of the eucain being enhanced and lengthened by the adrenalin, which actively contracts the arterioles, limits the blood supply, and retains the eucain in position.

I see no reason why amputations and hernia operations cannot be performed by the method, the main factor being the infiltration of all nerve trunks supplying the site, not forgeting the probability of nerve anastomosis. The more one sees of this analgesia the more is it preferred to general anesthesia, the patient escaping the risks and after-effects of the latter and the operator being saved anxiety.

Since publishing a note on the use of Collargolum for urethro-vesical lavage, Dr. Tansard, of Prof. Blazer's service at Hospital St. Louis in Paris, has successfully employed it in numerous cases. Thus by means of two daily auto-irrigations with a quart of a 1:500 Collargolum solution a urethritis that had persisted for several months was cured in 10 days. There was never the least irritation.

In old and chronic urethritis with profound lesions of the mucosa and periurethral cysts, the following method gave excellent results: Massage on a Benique 55 or 60 sound; urethral lavage with antiseptic solution; and finally a permanent injection of 30 to 45 minims of a 4% Collargolum solution, the urethra being closed with cotton. This did especially good service in a case of over two years' standing which resisted all other treatment. Four cases were all cured within 18 days. In three others he alternated, with good result, Collargolum irrigations with oxycyanide of mercury lavage.

Tansard further treated acute gonorrhoeas with oxycyanide of mercury until the discharge had nearly dried up, and then gave Collargolum instillation, the filament disappearing from the urine after 5 to 8 of them. Ten cases of chronic urethritis—some more than three years old—did not remain under observation until cured; but in all the gonococcus disappeared after less than 30 instillations, though there were still filaments in the morning urine.

In six gonorrhoeal cystites about 1 dram of a 4% solution were injected daily into the bladder. In five every vesical symptom disappeared within 8 days; the sixth, which was very violent, remained unimproved after 10 days and was put on silver nitrate, which acted no better.

Tansard concludes that Collargolum is an important anti-gonorrhoeaic, both in acute and chronic cases. It acts as rapidly as the silver salts. Urethra and bladder show a remarkable tolerance for it; the patient suffers no pain and has no desire to urinate after its use. Collargolum is not at all caustic; it is the silver itself that combats and destroyes the gonococcus in the urethra and bladder.—Abstracted from the Journal des Practiciens, May 20, 1905.

COLLARGOLUM IN CEREBROSPINAL MENINGITIS.

Gustav Bjorkman, M. D., Professor of Physiology, Milwaukee Medical College, Writes in "An Index of Diseases."

In my own experience I have met with great success in meningitis from the combined treatment with silver inunctions (Crede) and antiseptic packs on the skull. In some instances the suppuration took an outlet through the nose and ears; all cases that recovered regained their normal health in a remarkably short time. The method is to rub in from 1 to 3 grams (15 to 45 grains) of Unguentum Crede twice a day

at first and, when improvement follows, once a day. It is rubbed either on the trunk or inside the thigh for forty-five minutes. At the same time the hair of the scalp is closely clipped and moist borated gauze, drenched in a 1½% solution of formaldehyde, acetanilid and 1-10% of kresamine continually kept over the whole head, from the root of the nose backward down to the neck and on the sides, leaving the ears free. This pack is removed as soon as it becomes dry and a new one applied. Over the whole is placed a cap of oilcloth. There is no objection to the simultaneous use of ice-cap on top of the oil-cloth or ice-coil on the spine. It should be tried without hesitation, as it is entirely harmless, although in the beginning it causes inconvenience. By this combined treatment I have seen many cases, in every type of meningitis, recover; cases which, I am sure, would otherwise have succumbed.—Abstracted from Merck's Archives, January, 1905.

Edward Speidel, M. D., Professor of Obstetrics and Diseases of Women, Hospital College of Medicine, Louisville, reported before the Louisville Medical and Surgical Society, Nov. 21, 1904, an extreme case of puerperal sepsis in which he had excellent results with Collargol. After two weeks' treatment with the remedy she had a normal temperature and is now convalescent. He does not like the use of streptolytic serum, which he employed in several cases. In one case he used seven bulbs in 48 hours without any result.—American Practitioner and News, January 1, 1905.

Pure Milk for Children.

That the death rate among children is highest during the hot months is largely due to improper feeding and the use of impure milk. About 67 per cent of the mortality among children under one year is due to diarrhoea. The death rate is higher in cities than in the country, due in great measure to the fact that it is difficult to obtain pure milk from city dairies. This is particularly true during the summer, when peddled milk is a source of the greatest danger when used for infant feeding. The early morning delivery of milk to city homes consists of the milking of the preceding day. Unless the milk is properly cooled after milking it may contain tyrotoxin, which no amount of pasteurization, sterilization or digestion will overcome. Bacteriological examination of milk supplied to various cities last year showed many samples running as high as eight and ten millions to the c. c.

It is obvious, however, that cow's milk must constitute our main dependence in substitute feeding of infants. Ordinary sterilization does not simplify the problem, as the milk is thus rendered more difficult of digestion; pasteurization is not effective; the large amount of cane sugar in "condensed milk" is almost certain to cause derangement of the stomach and bowels. The solution of the question now seems to point to the use of a class of products commercially know as "evaporated cream." The Highland brand evaporated cream is the original method of preparing milk in this form, and is today the most perfect form of evaporated cream. Highland brand evaporated cream is simply pure, full-cream cow's milk, sterilized and evaporated to the consistency of rich cream. It can be modified in the same way as fresh milk, and is absolutely germ proof. On acount of the special process employed in its evaporation and sterilization, Highland cream is more easily digested than either raw or pasteurized milk.

The Most Satisfactory Method of Treating Hay Fever.

It is now regarded as a pretty well established fact that hay fever is a neurosis with the peculiar local manifestations of hypersensitiveness of the respiratory mucous membrane. Excessively humid air, dust, the pollen of certain plants, attenuated particles of matter, and certain volatile emanations cause a pronounced irritation of the mucous membrane. This is indicated by violent fits of sneezing; copious discharge of mucus; sensation of burning in the pharynx and post nasal and sometimes in the region of the forehead, the eyes, and the cheeks; more or less headache and difficulty of breathing, due to nasal stenosis produced by turgescence of the mucous membrane; and in not a few cases, cough and bronchial asthma. These phenomena are undoubtedly the direct result of the vasar motor paralysis that follows the primary irritation. They are caused by an engorgement of the tissues resulting from excessive dilatin of the capillaries. So much for the etiology and pathology of the distressing condition that annually incapacitates thousands of the most valued citizens of the country every year, and for which no method of treatment heretofore has proved more than palliative.

With the discovery of the remarkable therapeutic properties of the suprarenal gland and the isolation of its active principle, Adrenalin, a new day dawned for the hay fever patient. As our experience with Adrenalin increases we are more than ever convinced of its efficacy. Its very satisfactory and exceedingly prompt action in controlling the paroxysms is simply charming to physician and patient. It affords the sufferer the grateful relief from physical torment and mental anguish that he once learned to expect from cocaine; but the dangers and inconveniences of cocaine are entirely wanting after the use of Adrenalin. The latter powerfully contracts the capillaries, reduces the turbinal turgescence, thus relieving nasal stenosis, and checks the profuse flow of mucus. It also overcomes the sense of mental and physical depression that is so common in many chronic cases.

Andrenalin is used either in the form of the 1-1000 Solution or the more recent Adrenalin Inhalent. The latter is a permanent oily solution also of 1-1000 strength. Either solution may be sprayed into the nares and pharynx, during deep inspiration when it is desired to reach the lower air passages, or the nasal tissues may be treated by means of topical applications on cotton mops. It is unnecessary to use cocaine, as the Adrenalin Solutions are not at all or very slightly irritating. Adrenalin is

kept in the leading pharmacies of the country and the physician should have no difficulty in procuring it at any time. Messrs. Parke, Davis & Co., who market the Adrenalin preparations, have published a brochure on the treatment of hay fever that should be in the hands of every medical practitioner. It can be obtained by application to the Detroit office, or any of the branch houses.

Cystogen-Lythia Effeverscent Tablets.

The many indications for the use of lithia in combination with cystogen have resulted in the preparation of cystogen-lithia effeverscent tablets. Physicians will find these tablets of special value in the treatment of many conditions suggesting the addition of lithia as increasing the efficiency of cystogen. In rheumatism, gout, urinary deposits, ammoniacal urine, cystitis, etc., cystogen-lithia hastens the excretion of urates and uric acid and prevents the formation of calculus. These tablets are composed of cystogen 3 grains, lithium tartarate 3 grains; usual dose, one to two tablets three or four times daily dissolved in half a glass of water. Samples will be sent to physicians addressing the Cystogen Chemical Company, St. Louis, Missouri.

The severe burns only come to the physician's attention. In such cases immediate relief and early resolution will be obtained by the application of Phenol Sodique. As an anodyne and local anaesthetic for burns the value of Phenol Sodique is inestimable.

The primary shock attending burns is taken care of by the hypodermic administration of Morphine Sulph. ¼ gr. combined with Atrophine Sulph. 1-60 gr. Afterwards an application of Phenol Sodique only is necessary. As a first treatment remove the loose tissue, apply compresses of undiluted Phenol Sodique and protect the air. In after treatment apply Phenol Sodique diluted with 50 per cent distilled water or 25 per cent C. P. Glycerine.

The formation of pus and decomposition of loose or broken-down tissue is prevented by the application of Phenol Sodique. After first bandaging let remain until healthy granulation has ensued; as thus the burned portion is protected from the air.

Phenol Sodique soaked through the already applied dressing in quantities sufficient to keep the dressing moist will give excellent results. The close relationship existing between the kidneys and cuticle should not be lost sight of. The skin when burned cannot eliminate the impurities so forces this additional labor upon the kidneys. This condition should be watched and kidney treatment, if any, judged accordingly.

A severe case of burns, caused by the explosion of a gasoline stove, recently come under the notice of the writer. The patient, a carpenter by trade, was severely burned about the face, neck and hands. Although intense suffering was caused by the burns an immediate application of undiluted Phenol Sodique relieved this pain in a very short while. After the first application of undiluted Phenol Sodique the affected parts were bandaged and kept moist with a solution of Phenol Sodique. Today the face, and neck are entirely well, without a scar remaining. The hand still has red splotches, which is due to the fact that from the first day after meeting with the accident the patient continued his daily work, which necessitating the constant use of his hands retarded their healing.

Phenol Sodique is the best, safest and most generally used antiseptic for cuts, burns, sores, catarrhal conditions, etc. The uses to which this antiseptic can be applied are very numerous and can be better understood from the published literature on these subjects.

In the wasting diseases, as well as in rickets, scrofula and marasmus it is of the greatest importance that a remedy be selected which will quickly check the pathological condition, and restore the organism to the normal without producing digestive or other functional disturbances. Cod liver oil has always stood first in the category of remedies calculated to bring about this desirable result, but unfortunately its peculiar odor and taste are features which are quite often objectionable to patients. Hagee's cord. ol. Morrhuae comp. is an elegant preparation, containing all the essential therapeutic properties of cod liver oil and combined with tissue building chemicals (Hypophosphites of Lime and Soda) and aromatics, which renders it agreeable to the palate.

American Journal of Dermatology.

Notice.

Armour & Company announce their readiness to furnish the Parathyroid substance in powdered form, in one drachm vials, at $1.50 per drachm.

The parathyroid glands are very small, and so hard to get out that the material can be supplied only in very small quantities.

The Parathyroid substance has been suggested in the treatment of paralysis agitans, exophthalmic goitre, etc.

His Testimony.

Agent—"Did my patent medicine do you any good?"

Customer—"I should say so. I got so strong on it that I actually had the nerve to tell the landlord that the roof leaked!"—Detroit Free Press.